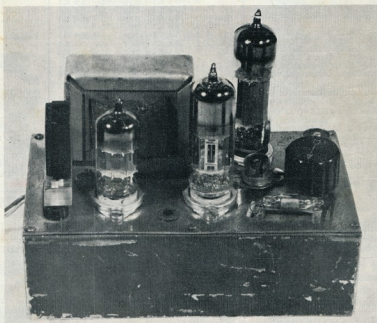


# AMATEUR RADIO

MARCH 1962



Vol. 30, No. 3



2/-

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# "AMATEUR RADIO"

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA. FOUNDED 1910.

MARCH 1962  
Vol. 30, No. 3

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before the 8th of the month preceding publication. Technical articles should preferably be typed, double spaced, on one side of the paper, signed and numbered. All drawings should be large and done in Indian ink.

★

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## WI Broadcasts:

VK3WI: Sundays, 1100 hours EST, simultaneously on 3573 Kc., 7146 Kc., 50.16 Mc. and 145.13 Mc.; Intrastate call-backs taken on 7050 Kc. VHF 1930 hours EST on 50.16 Mc. and 145.13 Mc.; call-backs taken on 2 metres.

VK3WI: Sundays, 1030 hours EST, simultaneously on 3573 and 7146 Kc., 51.016 and 146.55 Mc. Intrastate hook-ups taken on 7135 Kc.

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VK6WI: Sundays at 0930 hours WAST, on 7146 Kc. Intrastate hook-ups taken on 7085 Kc.

VK7WI: Sundays at 1000 hours EST, on 7146 Kc. and 3672 Kc. Intrastate hook-ups taken on 7115 Kc.

★

## OUR COVER

The unit shown, the "Minitran 6-2" is a compact two or six metre transmitter, which is more fully described on page 3.

## COMMENT

★

## W.I.C.E.N. AND EMERGENCY SERVICES

The recent tragic fires in Victoria served as a grim reminder of the price of complacency—the common belief that an emergency service was unnecessary because the State had been disaster free for a considerable period was suddenly shattered.

Those Radio Amateurs who rose to meet the occasion earned the thanks of the general public by the good work they were able to do under great difficulties.

How much more effective their efforts would have been had they had the advantage of regular practice and co-operation with other emergency services?

Several lessons are to be learnt from this experience. Firstly, the Institute must continue to fight to overcome apathy of Governments and the opposition of Instrumentalities to proper organisation of emergency services.

Secondly, the feeling within our own ranks that unless encouraged by Government activity regular practice by W.I.C.E.N. members is pointless must be overcome.

The most important fact that emerges is the need for enthusiastic leaders prepared not only to organise regular exercises for W.I.C.E.N., but also to sell its services to every organisation with which co-operation would be necessary in an emergency.

In an emergency full co-operation of Defence Forces, Police, Fire Brigades, Red Cross and Relief organisations is essential. In certain cases such as bush fires the Forestry Commission, Roads and Water authorities are involved. Effective correlation of effort place heavy demand on communications.

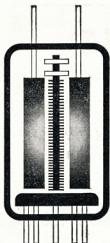
It is easy for everyone to sit down after the event and criticise the effort and duck-shove the responsibility for failure. However from the Amateur point of view, if every active Amateur took a quarter of an hour per week to practice proper procedure in a properly constituted net, led by enthusiastic and able leaders, there would be no need for heart burnings within our ranks. Furthermore, responsible authorities could not ignore the value of such a service.

FEDERAL EXECUTIVE, W.I.A.

## CONTENTS

The "Minitran 6-2" Transmitter ..	3	N.S.W. Division's 12th Annual Convention at Dural .....	9
Increased Audio Without Splatter ..	5	N.S.W. Divisional Dinner .....	9
Ex-Members of the R.A.A.F. ....	4	Correspondence .....	11
Trade Review:—		Federal and Divisional Monthly News Reports .....	19
G.R. Digital Time and Frequency Meter .....	7	DX .....	15
Four Hams at Norfolk Island ..	8	Sideband .....	13
Amateur Station on Display at Adelaide University .....	8	SWL .....	17
		VHF .....	12

# PHILIPS



## TRANSMITTING AND RECTIFYING TUBES FOR MOBILE EQUIPMENT

The necessity of telecommunication equipment for sea and air transport is obvious. In this field, telecommunication equipment is often obligatory. In many other fields, however, a need for communication is equally felt, but the bulk and cost of transceivers of usual design has long been prohibitive. Faced with this problem, equipment designers and tube and component manufacturers, working in close co-operation, have gradually developed mobile transmitting equipment that successfully combines small dimensions, low cost, ease of operation, high and dependable performance. As a result, mobile telecommunication equipment is being used on an ever-increasing scale in numerous fields, as, e.g.:

- coasters.
- motor launches of shipping agencies, ships' chandlers, contractors of harbour works.
- small fishing boats.
- tugs (e.g., for direct communication with their tow).
- seagoing yachts and other small maritime craft.
- fireguard for contact with central office.
- taxi cabs for contact with the central point.
- doctors' cars for contact with their base.
- building firms for contact between remote or not easily accessible spots.
- public utility firms for contact with their outside personnel.
- service firms for contact with their personnel on vehicles.
- lonely farms in sparsely populated areas.
- airport vehicles.

### Transmitting tubes

PREFERRED TYPES

Further additions to the range of "quick-heating" tubes will be announced shortly.

TYPE OF TUBE	QE02/15 Double Triode (6033)	QE04/15 Double Triode	QE08/12 Double Triode (6360)	QE09/14† Double Triode (7180)	QE09/15 Double Triode (5895)	QE03/20 Double Triode (6252)	QE05/40 Double Triode (6146)	QE05/35‡ Double Triode (6042)	QE06/40 Double Triode (5894)	QE11/150 Double Triode (4 x 150A)	QE08/200 Double Triode	PE1/100 Pentode (6083)	TE2.5/300 Triode (5866)	QE3/300 Triode (6155)	TE2.5/400 Triode	TE2/300 Triode
(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)
2 Mc/s	5.8 7.2*	7.0 8.0*	14.5 18.5*	14.5 18.5*	26.6 35.0*	48	52 69*	52 69*	90	195	200	132	390	375	390	500
20 Mc/s	5.8 7.2*	7.0 8.0*	14.5 18.5*	14.5 18.5*	26.6 35.0*	48	52 69*	52 69*	90	195	200	132	390	375	390	500
30 Mc/s	5.8 7.2*	7.0 8.0*	14.5 18.5*	14.5 18.5*	26.6 35.0*	48	52 69*	52 69*	90	195	200	132	390	375	390	500
60 Mc/s	5.8 7.2*	7.0 8.0*	14.5 18.5*	14.5 18.5*	26.6 35.0*	48	52 69*	52 69*	90	195		132	390	375	390	500
100 Mc/s	5.8 7.2*	7.0 8.0*	14.5 18.5*	14.5 18.5*	26.6 35.0*	48	53*	40	90	195			390	375	390	480
120 Mc/s	5.8 7.2*	7.0 8.0*	14.5 18.5*	14.5 18.5*	26.6 35.0*	48	35 47*	35 47*	90	195			390	375	390	475
150 Mc/s	5.8 7.2*	7.0 8.0*	14.5 18.5*	14.5 18.5*	26.6 35.0*	48	29 46*	29 40*	90	195			390	360	390	465
200 Mc/s	5.8 7.2*	7.0 8.0*	14.5 18.5*	14.5 18.5*	20.0 24.0*	48			90	185			197	225		445
300 Mc/s	5.8 7.2*	7.0 8.0*			6.5 8.0*	34.5			75	170						400
430 Mc/s	5.8 7.2*	7.0 8.0*				23			66	165						350
500 Mc/s	5.8 7.2*	7.0 8.0*				22			60	140						325
600 Mc/s		7.0 8.0*				20										290
890 Mc/s		7.0 8.0*														180
960 Mc/s		7.0 8.0*														

The

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PHILIPS ELECTRICAL INDUSTRIES PTY. LIMITED  
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\* Intermittent. † "Quick-heating" version of type QE03/12 (6360). ‡ "Quick-heating" version of type QE05/40 (6146).



PH46/61/8



# THE "MINITRAN 6-2" TRANSMITTER

By VK2ZTM, VK2ZCF, and VK2ZCK

★ An ideal simple rig for a car mobile or as the basis for an exciter for a higher powered unit.

THIS unit was created by a building project plus a change of plans, as Dick VK2ZCF, when building an exciter for 576 Mc., used a 12BY7 in the oscillator chain; the output from this tube tempted him to retune the coils to 144 Mc., add a modulator and the result was the "Minitran 2". These rigs have been used by both Dick and Tim VK2ZTM as mobiles for over a year and in addition they performed satisfactorily on an Interstate trip; several have now been built in VK2.

Reg VK2ZCK suggested that the 144 Mc. unit could be converted to 50 Mc. and its success added the full title to the article, the "Minitran 6-2".

The unit features a twin triode as an overtone crystal oscillator, with the second half acting as a tripler on two metres and as doubler on six, driving the p.a. stage, a 12BY7. This is modulated by a 6BM8, the triode section acting as an input pre-amplifier. Circuit is given in Fig. 1.

## CONSTRUCTION

Before commencing the construction, study the illustrated Figs. 2 and 3 which will identify the major parts.

**First stage (V1):** The slug-tuned former L1 is tuned to the third harmonic of the crystal (8 Mc. for 2 metres; 8.333 Mc. for 6 metres). The L1 former is from the 522 receiver ( $\frac{1}{2}$ " diam. slug tuned) from which are removed five turns so that it resonates at 24 Mc. for 2 metres and 25-26 Mc. for 6 metres. Frequency changes of some one megacycle have no noticeable effect upon output or interstage tuning.

[In using an overtone circuit it should be checked, by listening for the fundamental output on a receiver, that the crystal is actually operating in its overtone mode and in the correct overtone. When operating correctly, no output can be heard at the crystal fundamental frequency.—Ed.]

**Second stage (V1a):** This stage is tuned with a 3-30 pF. Philips trimmer and the addition of the 15  $\mu$ H. t.v. type choke at the grid pin, in series with the grid resistor, greatly increases the grid drive. [This is possibly due to

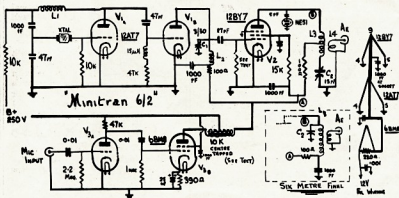
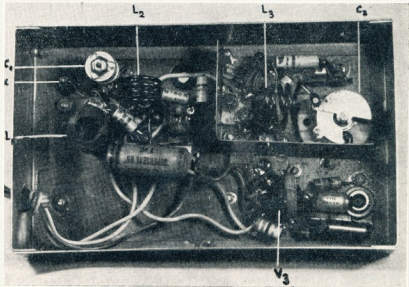
the increased impedance offered by the combined circuit.—Ed.]. In addition this stage is fed with modulated h.t. The plate coil L2 comprises six turns on  $\frac{1}{2}$ " diam. former of 16 s.w.g. (for 6 metres) and four turns of 16 s.w.g. on  $\frac{1}{2}$ " diam. for 2 metres. These coils should resonate, with the 3-30 pF. Philips trimmer, to 50 and 72 Mc. for 6 and 2 metres respectively.

**Final stage:** This comprises a 12BY7 which is a miniature sharp cut-off pentode normally used as a video amplifier in t.v. sets. Its maximum rating is 300

volts. In normal operation plate 250v., plate current 25 mA., grid 2 150v., with grid 3 earthed. Filaments are on pins 4, 5 and 6 which can be used as 6.3 or 12.6 volt heaters.

Mount the socket and earth the following pins with very short direct connections 3, 4, 5, 9 and 1. A shield is then run across the socket earthed to the centre spigot and the chassis at both ends. The 0.001  $\mu$ F. by-pass capacitors, see Fig. 1, should be connected directly from the socket pins and thence to earth by short direct leads. [Note filaments are wired for 12v.; alter if 6v. supply.—Ed.]

The grid resistor for the p.a. (12BY7) is 12K for 6 metres and 47K for 2 metres; p.a. tuning is by means of a 50 pF. condenser (Eddystone 553). The p.a. functions vary according to the band used; on six metres it is used as a straight amplifier, parallel tuned by

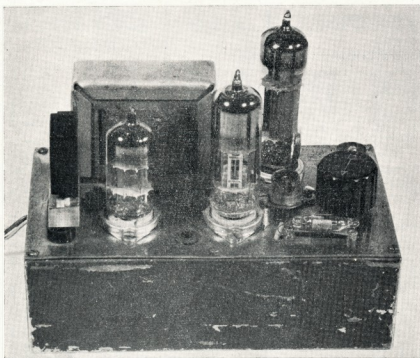


L3 (seven turns 16 s.w.g.,  $\frac{3}{8}$ " diam. with an output link L4 consisting of a one-turn link of insulated hook-up wire at the feed point end of the tank circuit (see Fig. 2). However on 2 metres the p.a. acts as a doubler, being series tuned by L3 (four turns 16 s.w.g.,  $\frac{1}{2}$ " diam. with an output link of one turn of insulated hook-up wire tightly coupled at the centre of L3. The h.t. is fed via a 100 ohm resistor to the centre tap of L3.)

## MODULATOR

This comprises a dual triode pentode tube (6BM8), one section, the triode, being used as a pre-amplifier coupled to a crystal mike. It is then capacity fed to the pentode section, the output plate of which is fed into a centre tapped 10K ohm speaker transformer

used as the modulator transformer. No gain control is used, thus the higher the output of the crystal mike the better. (Take particular care in using a crystal mike in a car, as the heat will ruin its performance. Never leave it in the glove box nor exposed to the direct sun's rays.)



**GENERAL**

Construction and layout is not critical, other than where mentioned. The chassis used for the units so far constructed has been a 6" x 4" x 2" unit, and a shield should isolate all sections (see photograph), particularly between the oscillator, audio, and p.a. sections.

A three-pole two-position switch can be used as the transmit-receive switch.

**ALIGNMENT**

All coils should be first roughly aligned by use of a g.d.o., then when the crystal is inserted the final touching up can be done. The following chart will give the correct frequencies for use on the 6 and 2 metre bands:—

	6 Metres	2 Metres
L1	25 Mc.	24 Mc.
L2	50 Mc.	72 Mc.
L3	50 Mc.	144 Mc.

No indicating meter is used in this circuit as the neon globe, NE51 type, is used for this purpose. To start the neon, whistle into the mike, then peak each stage for maximum glow, and dip the final for maximum light output from the neon, which also serves as a modulation indicator. Incidentally, the use of a 1 meg. resistor, in place of 5 pF. coupling capacitor to the 12BY7 plate, does not appear to have the same loading effect upon the final.

**AERIAL**

For mobile work the writers have used a whip aerial fed by 72 ohm co-ax. For 2 metres it is extended to 22", and to 56" for 6 metres; a close-spaced three element beam has also been used. To tune the aerials for maximum power output, a condenser should be placed

- 2 x 47K ohms, 1/2w. (only 1 on 6).
- 1 x 1 meg., 1/2w.
- 1 x 22 meg., 1/2w.
- 1 x 0.01 pF., 600v. paper.
- 1 x 0.1 pF., 600v. paper.
- 1 x 25 pF. electrolytic, 25v.
- 8 x 0.001 uF. for bypassing, ceramic, 500v.
- 2 x 47 pF. mica 600v.
- 1 x 27 pF. mica 600v.
- 1 x 5 pF. mica 600v.
- 1 x 15 uH. peaking choke, type VPC15.

**EX-MEMBERS OF THE R.A.A.F.**

A number of VK2 Amateurs who are ex-members of the R.A.A.F. Radio Branch, and located in the Sydney area, have decided to set up a c.w. net as a means of getting together and keeping in touch and invite all other Amateurs who are ex-R.A.A.F. to join in as the urge takes them.

The net will be known as the "Blue Orchid Net" and will operate on 3535 Kc. at 1000 G.M.T. For the present the nights will be Tuesday, Thursday, Saturday and Sunday. CQ B.O.N. will be the rallying call and it is hoped this net will bring together many of the ex-R.A.A.F. Amateurs whose only contact is during the R.D. Contest each year.

Zero day, March 3.—VK2QL.

**PI-COUPLERS FOR AMATEUR BANDS**



(Illustration GeloSO type)

- GELOSO 4/112 35-watt (for single ended 807, etc.) ..... £2 each
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- WILLIS Medium Power (general purpose) .. ..... £3/19/6 each
- WILLIS High Power (general purpose) .. ..... £4/17/6 each

**PI-COUPLER CHOKES**

- GELOSO No. 17572 (for use with 4/112 Pi-Coupler) ..... 10/- each
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- WILLIS Pi-Coupler Choke (for general purpose, high power) ..... 25/- each

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in series with L4 and earth; this is then tuned for maximum output from the 12BY7 p.a. stage.

**COILS**

Coil details are as follows:—

		6 mx 2 mx
L1 (1/2" diam. ex 522 set)	Remove	5 turns
L2 (1/2" diam., 16 s.w.g. enamel) .....	6T	4T
L3:—		
1/2" diam. air spaced, 16 s.w.g. enamel .....	7T	
1/2" diam. air spaced, 16 s.w.g. enamel .....	4T	

**PARTS LIST**

- Chassis 6 x 4 x 2 inches.
- 10,000 ohm speaker transformer, centre tapped.
- Slug former, ex SCR522 receiver.
- Crystal socket.
- Co-ax plug for antenna.
- Microphone socket.
- Three 9-pin ceramic sockets.
- 3-30 pF. Philips trimmer.
- 50 pF. variable capacitor (Eddystone 553), C1.
- Valves: 12AT7, 12BY7, 6BM8.
- Crystal: 8 Mc. for 2 metres; 8.333-8.5 Mc. for 50-51 Mc. (if operating near band edge check frequency as ordinary type xtals differ in frequency when used as overtone oscillators. Normally they run 20-50 kc. low at 2 metres!)
- Resistors: 2 x 100 ohms, 1/2w.
- 1 x 220 ohms, 1/2w.
- 1 x 390 ohms, 1/2w.
- 1 x 10K ohms, 1/2w.
- 1 x 10Kohms, 1w.—R1.
- 1 x 12K (for 6 metres only), 1/2w.
- 1 x 15K ohms, 1w.
- 1 x 47K ohms, 1w.—R2.

# INCREASED AUDIO WITHOUT SPLATTER\*

BY JOHN L. REINARTZ

IT is not generally realised, especially in cases where the Class B modulator transformer has poor regulation that a higher ratio of audio output in the positive direction can be obtained if the secondary of the transformer has an additional asymmetric load placed on it through the use of a diode tube and appropriate resistor. See attached diagram.

If the negative voltage excursion of the Class B transformer secondary just equals the plate supply voltage, then the positive voltage excursion cannot be as far because in the first instance there is no load across this secondary at the end of the negative voltage excursion and consequently no voltage drop, while in the second instance there is a maximum load across the secondary as the voltage swings in the positive direction with its consequent IR voltage drop and this subtracts from the positive voltage swing.

Placing an extra load on the transformer secondary through the use of a diode and series resistor so that this combination allows loading only on the negative voltage swing, provides a means for preventing the negative voltage excursion from exceeding the positive voltage excursion to any degree desired.

Adjustment of the resistor value can be such that the voltage and modulating power output of the Class B transformer secondary is even greater in the positive direction than in the negative direction with consequent greater modulation effects without, however, exceeding 100% modulation.

A summation of  $E_i I$  and  $E_i I$  will show that the requirement of a 50% modulating power for 100% modulation factor is not changed. It is interesting to note that there is a 16% load on the Class B transformer secondary during the negative voltage excursion and an 84% load on it during the positive voltage excursion with respect to the polarity of  $E_i$ . Thus there already exists an asymmetric loading of the Class B transformer secondary during an audio cycle.

The addition of the extra load proposed in B during the negative voltage excursion, if of proper value, results in nearly perfect symmetry loading of the Class B transformer secondary during the negative as well as the positive voltage excursions.

Let us consider a Class C r.f. stage that is to be amplitude modulated. This Class C r.f. stage is capable of a linear plate current increase with a linear plate voltage increase from a value that may be considered to be the d.c. plate voltage  $E_b$  to twice this voltage  $2E_b$ . Thus the plate input will go from  $X$  watts to  $4X$  watts. Consequently the stage being linear, it can be considered to represent a constant load  $R$ , determined by  $E_b/I_b$ ,  $I_b$  being the average plate current and  $E_b$  being the plate voltage  $E_i$ .

If we now add the modulating transformer to the Class C r.f. stage in the usual manner, shown in A of the attached graph, we can consider the secondary of the modulating transformer  $E_s$  to be the equivalent of  $E_i$  in voltage output, since 100% modulation is to be achieved. By definition, 100% modulation is achieved when  $E_i - E_s = 0$ ,  $I_b = 0$  and the output from the Class C r.f. stage is zero. Any time that  $-E_s$  is greater than  $E_i$ , overmodulation occurs, no current flows through the Class C r.f. stage since it is a unidirectional valve and the carrier power is interrupted.

Interruption of the carrier power can result in spurious sidebands that interfere with other uses of those frequencies and are to be avoided. These spurious frequencies are also generated when negative clipping is resorted to unless a filter is inserted in the circuit to round off the sharply clipped edges. However, it usually is impossible to re-establish the original wave form, thus some distortion is invariably present in the modulated output. The only reason for negative clipping and subsequent filtering being the desire on the part of the Radio Amateur for an increased modulated carrier output during the positive voltage swing of the modulation transformer secondary, yet prevent the modulation transformer secondary volt-

age swing in the negative direction from exceeding the normally applied d.c. plate voltage, consequently preventing the generation and emission of spurious frequencies.

It occurred to the writer that it should be possible to increase the emission in the positive direction of modulation without the need for clipping in the negative direction of modulation and thereby prevent both overmodulation and audio distortion. As an aid in visualising the action of the modulation transformer secondary and its effect on the Class C r.f. stage, an analysis of the several instantaneous values was made and the results shown as curves on cross-section paper.

Several interesting items not previously detailed in textbooks became clear and obvious. The separation of the total power output due to the instantaneous sum of the d.c. plate and the a.c. modulation transformer secondary voltages into their component factors  $E_i$  and  $E_s$  is clearly shown in the graph. It is also shown quite clearly that while the full  $-E_s$  voltage is developed during the negative voltage generation of the modulation transformer secondary equal to the d.c. plate voltage  $E_i$ , there actually is no load on either of these two generators. Only when the full  $-E_s$  voltage is developed during the positive voltage generation of the modulation transformer secondary equal to the d.c. plate voltage  $E_i$  are these separate generators fully and equally loaded.

The load curves for generators  $E_i$  and  $E_s$  are clearly a function of their instantaneous voltages and the instantaneous current  $I$  in the circuit system. Obviously  $E_i$  is constant,  $I$  varies from zero to  $2I$  and  $E_s$  varies from zero to the value of  $E_i$  additive, or subtractive. The load curve for generator  $E_i$  is therefore a straight line between zero and 200% load, while the load curve for generator  $E_s$  is a curve in the positive load direction from zero to 200% and a curve in the negative load direction from zero to a maximum of 25% load and continuous toward zero load at its maximum negative voltage swing. The sum of these two genera-

\* Reprinted by courtesy of Eitel-McCullough, Inc., San Bruno, California.

R =					
% $E_i$	% $E_s$	% $E_i + E_s$	% $I$	% $R_i$	% $R_s$ $R_i + R_s$
100	0	100	100	100	0
100	20	120	120	83.3	16.7
100	40	140	140	71.4	28.6
100	60	160	160	62.5	37.5
100	80	180	180	52.4	47.6
100	100	200	200	50.0	50.0
100	20	80	80	125	-25
100	-40	60	60	166	-66
100	-60	40	40	250	-150
100	-80	20	20	500	-400
100	-100	0	0	00	-00

Table 1.

Gen. 1			Gen. 2		
% $E_i$	% $P_o$		% $E_s$	% $I$	% $P_o$
100	0	0	0	100	0
100	20	20	20	120	24
100	40	40	40	140	56
100	60	60	60	160	96
100	80	80	80	180	144
100	100	100	100	200	200
100	120	120	-20	80	-16
100	140	140	-40	60	-24
100	160	160	-60	40	-24
100	180	180	-80	20	-16
100	200	200	-100	00	0

Table 2.



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**HEATHKIT SG-8  
R.F. SIGNAL  
GENERATOR KIT**  
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Designed for general service applications, the SG-8 covers 160 Kc. to 110 Mc. on fundamentals in five bands, and on up to 220 Mc. on calibrated harmonics of the fundamental frequency. Weight: 8 lb. Size:  $9\frac{1}{2}" \times 6\frac{1}{2}" \times 5"$ . Operates 110v. 60 cycles.

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**HEATHKIT AG-9U  
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GENERATOR KIT**  
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Switch-select frequencies with  $\pm 5\%$  accuracy and distortion less than 0.1% between 20 and 20,000 c.p.s. Frequency variable in steps of 1 c.p.s. from 10 to 100 c.p.s.; four-position multiplier switch provides decade relation on overall ranges of 10 to 100,000 c.p.s. Attenuator system operates in steps of 10 db. and is also calibrated in eight full scale meter ranges of 0.003, 0.01, 0.03, 0.1, 0.3, 1, 3 and 10v. r.m.s. Operates 240v. 50 cycles.

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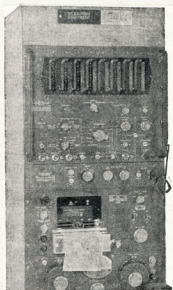
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**MELBOURNE:** 359 Lonsdale Street. Phone 67-8351.  
**PERTH:** Tough Instrument Service Co., 993 Hay St. Phone 21-7615.  
(Prices slightly higher in W.A.)



## G.R. DIGITAL TIME AND FREQUENCY METER

The name "General Radio" has been accepted for many decades amongst those who value good equipment. Their latest addition to a very comprehensive line is the new Digital Time and Frequency Meter, Type 1130A. This is a high speed storage, computer type, circuit with a range from "d.c." to 10 Mc., with an accuracy of  $\pm 1$  count  $\pm$  time base accuracy. The latter is supplied by an external 5 Mc. unit, Type 1113A, with an accuracy of one part in  $10^{10}$  per minute, or two parts in  $10^9$  per week. The counting rate is signalled by eight decades arranged in tandem, but with a difference; each decade of four can be used independently, one decade holding a count, the other simultaneously counting.



The multivibrator circuits, etc., are on printed circuit boards which can be quickly removed for service; in addition circuit boards can be provided as spares, thus reducing service time.

The equipment features the accepted G.R. finish and the use of two colour contrasts on the panel controls makes interpretation of information an easier task. Extras can be provided for digital to analog converter, a data printer, standard frequency oscillator, servicing accessory, and a frequency converter for measurements up to 500 Mc.

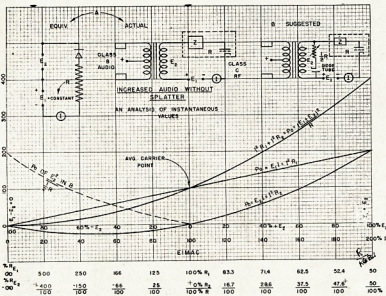
This equipment would be of value wherever accurate time or frequency measurements, etc., are required in a short time interval, as dead time is 20% of the counting interval (2 msec. to 2 seconds).

Full or technical information is available from Warburton Franki offices in New South Wales, Victoria, Queensland, South Australia, and Tough Instrument Service Co. in Perth.

series, connected across the modulating transformer secondary so that current flows in this auxiliary circuit only when the voltage swing is in the negative direction is therefore indicated. The value of the resistance we have already determined to be  $\frac{1}{2}R$ , while its watt rating should be  $\frac{1}{2}R \div 4$ .

$\%E_1 + E_2$	$\%I$	$\%Po$
100	100	100
120	120	144
140	140	196
160	160	256
180	180	324
200	200	400
80	80	64
60	60	36
40	40	16
20	20	4
0	0	0

Table 3.



Having noted that the generator  $E_2$  sees no load when its voltage equals the voltage of  $E_1$ , but is subtractive and sees  $\frac{1}{2}R$  when its voltage equals  $E_1$ , but is additive, it follows that no voltage drop occurs in the first instance and maximum voltage drop occurs in the second instance due to the losses that occur in the modulating transformer secondary winding, constituting its own Ir drop and since this Ir drop subtracts from the positive voltage swing, if we can still equal  $E_1$  at this point, we must somehow prevent the negative excursion from exceeding  $E_1$  by the amount of 100% modulation.

We have now come to the crux of the whole analysis. We require a means to produce an Ir drop in the modulating transformer secondary when its voltage swing is in the negative direction to equal the Ir drop when its voltage swing is in the positive direction. A diode tube with a resistor in

The loading on the modulation transformer secondary when its voltage swing is in the negative direction will now be as indicated by the dotted line in the graph. It will be noted that the modulator system now has a symmetrical loading during the negative as well as positive voltage swing, resulting in reduced second harmonic distortion, full modulation on the positive voltage swing and prevention of over-modulation on the negative voltage swing.

### CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."



## The UNIMOD Modulator Unit for Tetrode Amplifiers

The Unimod is a controlled carrier screen modulator that is applicable to most tetrode final amplifiers, and which offers the advantages over other types of screen modulators that it allows a higher level of modulation, and a reduced average plate current, which enables relatively high power transmitters to be run from small power supplies, making the system ideal for mobile and field day equipment, where power supply is at a premium.

Using the Unimod a single 6146 may be modulated to approximately 90 watts peak input, and a pair to approximately 180 watts.

A crystal microphone is fed into a 12AX7 amplifier, and thence to a 6C4, which acting as a clamp, not only amplifies the audio, but establishes a d.c. level at its anode proportional to the applied audio. This output is then directly coupled to a paralleled 12AT7 cathode-follower, which applies audio and proportional d.c. to the screen of the final amplifier.

In order to use the unit, a switch must be provided that will permit the connection of a normal screen resistor, or the modulator, to the final.

Adjustment is carried out as follows: The screen is switched to the resistor (c.w. position), and the amplifier loaded as for normal c.w. operation. The switch is then set to connect the Unimod, the p.a. plate current then falling to about a quarter of its c.w. value. The audio gain control should then be adjusted so that normal speech causes the plate meter to kick up to about threequarters of its value in the c.w. condition.

The Unimod kit, which comprises the heavy cadmium plated steel chassis (ready pre-punched) approximately 7" x 13" x 1½" deep, and all necessary parts, wire, solder, and instructions is priced at a new low price of £6 plus 12½% sales tax.

The chassis only, complete with instructions, £2 plus tax.

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## FOUR HAMS AT NORFOLK ISLAND

During November and December, VK5XK took a holiday on Norfolk Island. At that time there were four VK Amateurs located on the island at the one time—some kind of a record!

The photograph shows (left to right): Arch Hewitt (VK5XK), Ray Hoare (VK9RH), Ray Baty (VK9GP) and Dave (VK2GT). They are all employed in connection with communications. 5XK, P.M.G. Dept.; 9RH, D.C.A.; 9GP, O.T.C. cables; 2GT, D.C.A.



Dave VK2GT was not on holidays but working. He had no rig with him. Ray VK9GP, who is a wag, said, "Well, let 'em drop all the H bombs now. The gang here should be able to manage any emergency in communications." He might have been correct too!

—Arch Hewitt, VK5XK



## Amateur Station on Display at Adelaide University

The University of Adelaide Radio Club (VK5UA) will be operating an exhibition Amateur Radio Station at the Adelaide University during the week March 5-9.

Through the courtesy and co-operation of R. H. Cunningham Pty. Ltd. it is expected to have two stations active, one a K.W. "Viceroy"/Eddystone combination, will operate on 40 and 20 metres s.s.b. and c.w., and the other, a Gelo G222-TR/209-R combination will work on 40, 20 and 15 metres a.m.

All Amateurs are requested to make a point of listening for and contacting the stations during 5th to 9th March. Those Amateurs who visit the exhibition will be welcome.

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**ALSO AMATEUR TYPE CRYSTALS—3.5 AND 7 Mc. BAND.**

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# N.S.W. DIVISION'S 12th ANNUAL CONVENTION AT DURAL

Convention times comes, Convention time goes, each with its pleasant memories of meeting that other fellow, but we feel that the recent Convention held by the N.S.W. Division will remain a pleasant memory for many years.

The day dawned dull and overcast, later turning to a light but continuous drizzle, but not sufficient to dampen the ardour of the 207 men and 37 ladies who attended at the grounds of the Divisional Station, 2TW1, at Dural, a pleasant spot some 35 miles from Sydney. Representatives were present from most parts of the State and included a visitor from VK3 and also a visitor from Portland, Oregon, U.S.A., in the person of Mack McNally, WTJDX.

The Convention commenced for many some miles from Dural as a mobile scramble was held en route with many mobiles participating, only one casualty being reported, that of Bill 2X1 who suffered the misfortune of losing the top of his whip during the contest while negotiating Gelston Gorge.

On arrival at the location of the "Do" it was found that the registration tent was manned by Alan L3185 and Tony L2289, who deftly but kindly separated the necessary 3/- from each adult, children being admitted free of any charge. The great mass of folders of technical literature and notes were immediately dispensed at the booth, leaving all to go their way and to take their part in the many activities.

For the first time in Australia, mobile stations were checked and assessed for such points as field strength, installation, finish and design, transmitter usage, frequency control, netting facility, metering facilities, road safety features, and antenna design and installation, operable on either 7 Mc. or 144 Mc. The P.I. testing was under the control of Harold 2AAH with Ted 2ACD doing the necessary pencilling. The assessment, a long and exacting task, was undertaken by Oak 200, Max 2MP and Ted 2ACD.

While all this was proceeding to schedule, morning tea was organised by a group of

ladies to whom we offer our grateful thanks, and many parties were seen to be enjoying what would be a welcome meal and cuppa. Later, of course, the tea makers suffered rather severe competition by the opening of the keg under the supervision of Ken 2XS, one of our noteworthy members of the golden fluid.

Many present had noticed a large truck arrive and paid much attention to the large area allotted to the disposals group who had for sale a large amount of disposals equipment, valves and crystals, etc.

Adjacent to this was the commercial display arranged by Ron 2ALR, of W.F.S. Ltd., who was showing the latest in Halliellar equipment, and who, incidentally, made available as prizes two co-axial relays and a broadband amplifier. Ron, we noticed, was kept very busy all day with many enquiries from the large crowd.

## OUR THANKS

We are indebted to the following business houses who, by their support again this year, in making generous donations of prizes and technical literature to a value of nearly £200, have assisted your committee to make this 12th Annual Convention such an outstanding success.

Amalgamated Wireless Ltd.  
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Union Carbide Australia Ltd.  
Rola Company (Australia) Ltd.  
W.F.S. Ltd. (Halliellars).  
Ducon Condenser Co. Ltd.  
R. H. Cunningham Ltd.  
American Radio Relay League.

A further demonstration was arranged of s.b. gear by Leo 2AC, Stan 2EL and Harry 2AL2 and also to be seen was some very home-brew u.f.o. equipment which was in operation during the early part of the day.

On such a Picnic Day, luncheon is always in demand and many family groups were seen scattered around the grounds enjoying a good meal, many of the kiddies patronising the stall which was selling all the goodies the kiddies love.

While the 7 Mc. fox hunt was in progress Max 2MP was busy organising the many com-

petitions, including a novel one of a constructional nature. Participants were supplied with a small chassis with sockets mounted and were supplied with wire, resistors and condensers and were instructed to construct a Pierce Oscillator in minimum time. A receiver was on hand to check the oscillators on conclusion.

The QSL Bureau and Secretary's tent was manned by the appropriate people, Frank 2QL and Bill 2EG, who reported having done a large volume of business during the day.

A further event in the afternoon was the blindfold hunt, always popular and run as only the blue hunter, who had done a lot of our many thanks to Bill 2EH and his team of willing helpers.

The 144 Mc. fox hunt was run next and a number of cars set out at high speed to endeavour to find the fox, Neville 2ZNM, and who was also the fox in the previous events, thus missing a lot of the Convention.

A disposals auction appeared to be the next on the programme and as usual was extremely well patronised by the crowd present.

All good things must per force come to an end, and finally all present were assembled, under poor weather conditions, to see the prize giving and the close of yet another Convention at Dural.

The many prizes were won by—

Bill 2CD, contest: 1st, 2SW; 2nd, 2AWW; 3rd, 2XP.  
Guess the value freq. 1st, 2EL; Cons., 2AQX.  
Guess the value of capacitors: 1st, 2ZEX; Cons., 2AQX.  
Guess the value of resistors: 1st, 2RX; Cons., 2EL.  
Guess the frequency of L/C: 1st, 2ZKX; Cons., 2EL.

Identify the object: 1st, 2EL; Cons., 2AQX.  
Blindfold hunt: 1st, 2EH; Ladies, Mary West; Boys, Alan Williams, Grib, Kay Lewis.

Mobile scramble, h.f.: 1st, 2AAH; 2nd, 2FM; 3rd, 2AN.

Mobile scramble, v.h.f.: 1st, 2ZXY; 2nd, 2ASZ; 3rd, 2ZAU.

Mobile rig efficiency, h.f.: 1st, 2AMA; 2nd, 2ACK; 3rd, 2FE.

Mobile rig efficiency, v.h.f.: 1st, 2ZPJ; 2nd, 2ZAU; 3rd, 2ZCF.

7 Mc. tx hunt: 1st, 2AAH; 2nd, 2SD.

144 Mc. tx hunt: 1st, 2ZAH; 2nd, 2RX; 3rd, 2ASZ.

Mobile rig assessment: 1st, 2AMA; 2nd, 2ACK; 3rd, 2AAH.

Mobile rig assessment, Z Calls: 1st, 2ZCF; 2nd, 2ZAU.

Grand award prize: 2AAH.

Special prize for the fox: 2ZNM.

Lucky number: Men, Mike Hodgkiss; Ladies, Mrs. J. J. J.

Finally to all those who have assisted the committee in any way however small, we do appreciate your help, and hope that you will again give a hand to the committee who may be organising the 13th Annual Convention—or may be you will be one of the committee. See you at the big "Do" of the year in 1963.

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For the first time for many years in N.S.W., a Divisional Dinner was organised by the 1962 Convention Committee under its chairman, Max 2MP, as the activity for the second day of the three-day Convention. The other members of this committee are Harold 2AAH, Ted 2ACD, Oak 200, Alan L2185, and Peter L2187.

The Dinner was held at "Ivanhoe," 49 William St., Hornsby, with an attendance of 60 members, who it appears thoroughly enjoyed an excellent repast with all the trimmings.

The M.C., Oak 200, following Dinner, introduced the Divisional President, Bill 2YB, who in turn welcomed the members assembled and commented on the achievements of the current year, expressed his pleasure at attending such a function and many family groups were seen scattered around the grounds enjoying a good meal, many of the kiddies patronising the stall which was selling all the goodies the kiddies love.

While the 7 Mc. fox hunt was in progress Max 2MP was busy organising the many com-

petitions, including a novel one of a constructional nature. Participants were supplied with a small chassis with sockets mounted and were supplied with wire, resistors and condensers and were instructed to construct a Pierce Oscillator in minimum time. A receiver was on hand to check the oscillators on conclusion.

The QSL Bureau and Secretary's tent was manned by the appropriate people, Frank 2QL and Bill 2EG, who reported having done a large volume of business during the day.

A further event in the afternoon was the blindfold hunt, always popular and run as only the blue hunter, who had done a lot of our many thanks to Bill 2EH and his team of willing helpers.

The 144 Mc. fox hunt was run next and a number of cars set out at high speed to endeavour to find the fox, Neville 2ZNM, and who was also the fox in the previous events, thus missing a lot of the Convention.

A disposals auction appeared to be the next on the programme and as usual was extremely well patronised by the crowd present.

All good things must per force come to an end, and finally all present were assembled, under poor weather conditions, to see the prize giving and the close of yet another Convention at Dural.

The many prizes were won by—

Bill 2CD, contest: 1st, 2SW; 2nd, 2AWW; 3rd, 2XP.  
Guess the value freq. 1st, 2EL; Cons., 2AQX.  
Guess the value of capacitors: 1st, 2ZEX; Cons., 2AQX.  
Guess the value of resistors: 1st, 2RX; Cons., 2EL.  
Guess the frequency of L/C: 1st, 2ZKX; Cons., 2EL.  
Identify the object: 1st, 2EL; Cons., 2AQX.  
Blindfold hunt: 1st, 2EH; Ladies, Mary West; Boys, Alan Williams, Grib, Kay Lewis.  
Mobile scramble, h.f.: 1st, 2AAH; 2nd, 2FM; 3rd, 2AN.  
Mobile scramble, v.h.f.: 1st, 2ZXY; 2nd, 2ASZ; 3rd, 2ZAU.  
Mobile rig efficiency, h.f.: 1st, 2AMA; 2nd, 2ACK; 3rd, 2FE.  
Mobile rig efficiency, v.h.f.: 1st, 2ZPJ; 2nd, 2ZAU; 3rd, 2ZCF.  
7 Mc. tx hunt: 1st, 2AAH; 2nd, 2SD.  
144 Mc. tx hunt: 1st, 2ZAH; 2nd, 2RX; 3rd, 2ASZ.  
Mobile rig assessment: 1st, 2AMA; 2nd, 2ACK; 3rd, 2AAH.  
Mobile rig assessment, Z Calls: 1st, 2ZCF; 2nd, 2ZAU.  
Grand award prize: 2AAH.  
Special prize for the fox: 2ZNM.  
Lucky number: Men, Mike Hodgkiss; Ladies, Mrs. J. J. J.

Finally to all those who have assisted the committee in any way however small, we do appreciate your help, and hope that you will again give a hand to the committee who may be organising the 13th Annual Convention—or may be you will be one of the committee. See you at the big "Do" of the year in 1963.

## N.S.W. DIVISIONAL DINNER

familiar means of communication—s.m., c.w., and s.b. The moderator for the forum was Oak 200 who led the panel consisting of Leo 2AC and Stan 2EL for s.b.; Bill 2YB and Syd 2SG for c.w.; and lastly VFO and Max 2MP for a.m.

A most amusing and well staged discussion followed for nearly an hour, with the moderator, at times, at his wit's end, and the forum which, on popular vote, was decided on a dead heat for all three modes of transmission. The participants in the discussion were all of great ingenuity in the production of the gimmicks used during the discussion and for the humorous remarks made by those who were conducted.

An open discussion was held in which many questions, both sober and humorous, were put to the panel of experts.

The function closed at a late hour and we feel sure that all attending had enjoyed themselves to the full on a memorable evening.

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## RADIO BOOKS OF INTEREST TO AMATEUR OPERATORS

### USING THE OSCILLOSCOPE IN INDUSTRIAL ELECTRONICS

Robert G. Middleton and L. Donald Payne, 52/6 and 1/6 post.

### TRANSISTORS—"HOW TO TEST THEM," Gernsback Library No. 94, 21/- and 1/- post

### INDUSTRIAL TRANSISTOR AND SEMI-CONDUCTOR HANDBOOK

Robert B. Tomer, 52/6 and 1/6 post

### TROUBLESHOOTING AMATEUR RADIO EQUIPMENT

Howard S. Pyle, 26/9 and 1/- post

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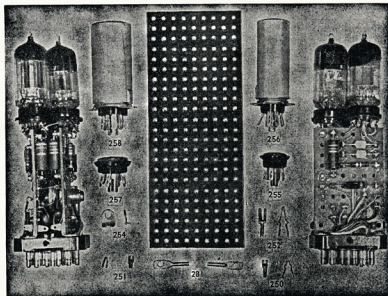
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# Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

## EARLY 144 Mc. CONTACT?

Editor "A.R.," Dear Sir,

The following information, found in "A.R." of August 48, under the heading "144 Mc. Digest," may be of interest to those 144 Mc. operators at present active in the pursuit of the "rare-and-elusive".

In June 48, VK4FV heard VK2VW over a distance of 450 miles. The signal peaked S6 and was audible for about 16 mins. VK4FV was using a 522 Kc. with vertically polarized dipole 34 ft. high, whilst VK2VW used a 522 Kc. with a horizontally polarised 4 element beam. A Call Book of that era gave the QTH of VK4FV as Brisbane and that of VK2VW as Sydney. I could not find any further reports that indicated a QSO had followed because of this hearing, which was confirmed by VK2VW incidentally.

I found this report most interesting and would like to know if a QSO over this path was ever made on 144 Mc. Surely, in this day of s.a.b., 150 watts and large beams possible on the band it should be an easy contact. Maybe, the present-day 144 Mc. man is slipping?

—David Rankin, VK3QV.

## VHF—THE PRESENT STATE OF THE ART

Editor "A.R.," Dear Sir,

I read with interest the letter in "A.R." Oct. 1, "V.H.F.—The Present State of the Art." There is very little I can fault in this letter, which should be read by ALL Amateurs, and perhaps it will have a few complimentary notes. The only thing wrong is that the writer signed under a non-de-plume.

When I first read the issue I was shocked to read a blistering letter from VK3ZCR/T, referring to this letter.

Low power is no affront to the chap the other end after all 9-10 watts are only two 5 points down on one's running of the full 150 watts. With reference to disposals equipment, VK3ZCR/T has misinterpreted the meaning of paragraphs. In one he says we have no excuse for not running 50 watts or so with the disposal market as it is. In another he says we should and says a common easily converted piece of disposal gear should be banned from the bands.

Now he openly discriminates against low power stations. I hope this is not the general Amateur's attitude. Anyway, how can he tell whether they are low power; they may be high power with their beam in a null point. I am happy to work any Amateur whether he uses low power like myself, 36 watts, or high power, whether he is near or far. In another paragraph with reference to using only 500 Kc. of a 4-megacycle band, VK3ZCR/T states he does look for weak signals.

From VK3ZCR/T's letter in general I get the idea that he thinks that his ideas are the only ones that count. He contradicts himself several times in his letter. I think that the whole reason for the letter was One Angry Young Man" and think before he writes.

—Rodney Champness, VK5ZCD.

Editor "A.R.," Dear Sir,

I have read and re-read Mr. Rechner's letter (Nov. "A.R.") and am still at a loss to understand the point of view which he is trying to convey.

First he says he openly discriminates against low power and weak signals. So what? The title of his letter is "The Amateur's use of only 500 Kc. when looking for weak signals. Why tune for them when you won't work them?"

I am sure the Ballarat gang and that well known Yankovitch fellow have by now thrown their bodies over the gap.

I suggest F.E. approach the Frequency Allocation Committee, and let them know that the Kc. the thinking operator does not want to be traded for the 100 Kc. we lost in 3.5 Mc. band.

I would suggest that a small portion of a 4 Mc. band be set aside for the use of VK3ZCR/T and others of his ilk (if there are any) and that Mr. Abernethy listens to them. The point of view which he is trying to convey in his letter is that he has proved himself to be what many have thought him to be.

—G. F. Lucas, VK5LL.

Editor "A.R.," Dear Sir,

At VK3ZCR/T has raised a couple of matters which have occupied my mind for some time. These concern disposition of stations in the

144 Mc. band frequency-wise and the difficulty of finding weak DX stations when they are scattered over a megacycle or so. My experience is that if a station is strong enough to read on a.m. it can be detected by a quick scan over the band—provided the b.f.o. is switched on. However, stations only readable on c.w., i.e. S3 and less, require more searching for, particularly if there is QSB. The really weak DX on super DX may only out beyond 150 miles is the main problem.

There are two main aspects of the problem. The first is that during DX sessions here in Melbourne, and apparently other capital cities, there are a lot of stations active—although the DX may hear only one or two. If the DX is not a capital city, there are a lot of stations and most of them are, the chances of everybody being happy are negligible. The Melbourne stations on that crystal or near it, and there are probably 150 stations, aren't happy at causing QRM to the DX. And the DX won't get many contacts unless a few Melbourne stations stay off.

Moral: Stay away from community crystals —they may be cheaper, but you are buying trouble.

The second aspect is that of finding and identifying a weak signal in 1,000 kc. of spectrum space, with a rx using 300 cycle b.p. filter—this is the problem of the DX.

The obvious solution is to divide the 1,000 Kc. by 10. If we have to tune from 144,000 to 146,000, the job is greatly simplified.

Hence, to put the matter another way, this portion 144,000 to 144,100 Mc. be made a c.w.-weak DX band by gentlemen's agreement. Local top ups and ragchews to be congregated above 144.1 Mc.

One snag of course is that Z calls are not permitted to use c.w.—their a.m. would take up more space.

All the aids to weak signal working, large long yard arrays, parametric amplifiers, highly selective rx's place restrictions on the use of band which can be effectively used. Hence if we are to make progress in this field we must concentrate the DX in a narrow portion of the band.

Any scheme to put the DX up beyond 145 Mc. or even 146 Mc., as I have heard mentioned recently, is a serious error. It is a waste with a little co-operation and patience my scheme could be made to work to the advantage of all.

In conclusion, may I say that I cannot understand why Z calls are not permitted to use c.w. C.w. saves an n.f. advantage of 16 db. over a.m. VK3ZCR/T. says that the use of c.w. signals are only S1 or S2, is really something, and besides, it takes up far less spectrum space.

—L. F. Berwick, VK3ALZ.

## THE SPACE AGE

Editor "A.R.," Dear Sir,

I have read with interest the new frequency allocation for all radio amateurs. I feel that I am too badly, thanks to the many people who have devoted time and energy on our behalf. There is one place, however, I should like to raise, as we all know that is far beyond the space age. Manned orbital flight has already been achieved. Manned lunar probes are likely within the next few years. As the space age advances, it is inevitable that the flight within the decade. Radio Amateurs can expect to be working interplanetary DX within the next few years. The space age is a time of lunar reflection is already being done by Amateurs overseas. The only frequencies suitable for communication beyond the ionosphere are u.h.f. and microwave.

I notice that whilst we have a number of u.h.f. and microwave assignments, in every case the Amateur is placed on a secondary basis to radio location services. As the space age advances, it is inevitable that the Amateur should press for an exclusive allocation. As things stand at the moment the most suitable band appears to be 1,096 Mc. As standardised transmission and reception techniques are the only satisfactory ones, it would not require an allocation of more than a couple of megacycles. The frequency of 1,096 Mc. is a good relationship of the v.h.f. band 144-148 Mc. i.e. 1,296-1,300 Mc. would be suitable. Surely this would not be too much to ask.

—L. F. Berwick, VK3ALZ.

## REMEMBRANCE DAY CONTEST

Editor "A.R.," Dear Sir,

My recollection of "A.R." (Sept. '61) has brought forward a number of comments, most of which have been made "on the air" and more or less in agreement with my own remarks, which were made in all sincerity and not in any way intended to cause amusement. I had intended to let the matter rest for a time, but the number of requests for comment I realise that the conditions on the Amateur frequencies during the R.D. Contest, and possibly the use of a number of a nature, are symptomatic of an even more serious problem. In

an attempt to explain this problem, once more I am compelled to take up my pen.

It is agreed, apparently, that the contest did exist on August 13, 1961, howling, seething mass of signals. This was to be expected, of course, in view of the great number of Amateurs operating at the time. My complaint was not concerned with the number of stations on the bands, but with the "rotten QRM" which was the result of a many group, reflecting on all Amateur Operators.

On close reading of the letter submitted by Mr. Groves ("A.R." Dec. '61), it occurs to me that the complaint shows my own sentiments on the subject. However, in defence of people who may not be so fortunate as to have others agree with their criticism, I now mention these points which, if taken to heart, could help in solving our various difficulties.

For centuries the younger generations have faced the task, in the field of human endeavour, of repairing the damage caused by their forebears through ignorance, misconception, and apathy.

Many of the older and supposedly more mature members of our communities have always been, and will continue to be, either incensed or amused by the idea that the youngsters of the time could possibly improve what has already been achieved. To these I say that the youngsters of the time are not inordinately proud in the past and hope for the continuance of the status quo, we are in a position to improve the status quo, and for self-analysis, a dissatisfaction with existing conditions, and the realisation that our own efforts towards improvement will be thwarted, if we do not improve the field of human endeavour, and by the apathy and limited foresight of our predecessors.

One thing to mention, that I am thankful for the benefits which are ours, but let us also be thankful that, stimulated by criticism, we are able to improve the best of our capabilities.

Let us move into 1962 with a critical eye and an unprejudiced mind, and improve the standard of our behaviour, and let us move by our gentlemanly behaviour at all times.

—Morton P. Davis, VK3JANG.

## WHAT S.W.R.

Editor "A.R.," Dear Sir,

The August 1962 issue of "A.R." contained a reprint of the article, "How Important is the S.W.R.?" by "Wun Gee Kew". I regret that the reprint was not published. The publication of this article of which I was previously unaware) since it contains the completely incorrect idea that reflected power is necessarily lost.

I would take the trouble to explain why reflected power is not lost except that I have already explained it so carefully in an article, "Match, or Not to Match," contained in the Sept. 1958 issue of "QST". Therefore I need not repeat it.

On the other hand, I do agree with "Wun Gee Kew's" main point that Amateurs frequently expend unjustified effort in lowering their S.W.R. However, this effort is not unjustified than even "Wun Gee Kew" realised, as the reader of my article can see.

It is a pity that I have not been able to appreciate it very much if you would print my new QTH in "A.R." as I have made many friends in VK-land, and have the air and in the contest, and in the sixth month of the year in 1962. This QTH (740 Willowbrook Road, Boulder, Colorado) was one that I acquired in July of 1961.

—Yardley Beers, W0EES, ex-W2AWH (Member of N.S.W. Div. of W.I.A.).

## RECIPROCAL LICENSING

Editor "A.R.," Dear Sir,

I have been here for nearly a year now, but I haven't been involved much in Amateur Radio, because of lack of reciprocal licensing arrangements.

One thing that has impressed me is the apathy of most of the Amateurs I have met towards the subject of reciprocal licensing. I know that there is an energetic group in W6 working towards this end, but over here I have seen very little of it. I am sure that the mistakes on frequency allocations, where so many of us were actively involved, this apathy comes as a bit of a shock.

My friends here have asked a dozen or perhaps twenty Amateurs whether they have written to their Senators in support of Senator Goldwater's bill. So far, however, I have not heard of any who have done this. Some say they intend to do so later, in a half-hearted sort of way, which is not the attitude I am looking for. Others haven't heard of Senator Goldwater's bill. Some don't even realise that foreign Amateurs cannot operate Amateur Stations in the U.S.A.

(Continued on Page 17)



The large amount of recent activity on the v.h.f. bands has once again brought to light the very poor operating procedure displayed by far too many Amateurs. The major offenders appear to be those using v.f.o. and v.x.o. control. Amateurs who use this type of equipment should always check on their own frequency before transmitting, to make certain the channel is clear.

This of course also applies to crystal controlled stations. No frequency is yours exclusively.

It is accepted practice to v.f.o. on to the other station's frequency if you intend to rag-chew, but when calling a DX station you should not block his frequency but call him 10 Kc. higher or lower.

DX stations should make a point of not replying to a station on their own frequency unless, of course, it can be established that the offender is crystal controlled.

Also, when using so-called tail-ending procedure, always check the frequency as soon as you have finished your contact.

One of the most infuriating offenders is the DX station who tunes the band in oscillating jerks, thereby never giving any indication: whereabouts he is going to listen. Always tune steadily from one end of the US part of the band to the other, never reversing direction.

V.f.o. control is a step in the right direction, but improperly and carelessly used, it causes needless aggravation and trouble.

I am more than a little disappointed that there are no notes from Victoria and South Australia this month. I trust that this will not happen again.

Let me repeat once again, that all news should be posted to the scribe in your State to reach him no later than the second day of the month preceding publication. Scribes should post their notes to reach me no later than the seventh day of the preceding month—3ARZ.

## PROJECT OSCAR

Those who took the trouble to submit logs on Oscar I. to the organisers of the project will by now be in receipt of regularly airdropped information. The basic information to date is that it is hoped to launch Oscar II. some time in April. Greater emphasis is placed on measurements of Doppler shift, but it is stated that high gain beams and antenna tracking systems will be unnecessary. It is possible that two or three information channels may be used. The original c.w. keying will be retained. For some of the measurements two stations should work as a team.

Measurement of Doppler shift demands considerable accuracy if the results are to be of any real use. A technique is described in QST for July, 1962. Give some thought to the idea of the requirements. However, later, simplified (and tried) techniques are to be described in QST for March 1962. An effort to obtain this issue as soon as possible will be well worth while, and perhaps a start now on the construction of a simple Doppler meter. One station can work from 144.95 to 145.00 would be a step in the right direction.

It is noted that in the Feb. 4 newsletter, into two VK stations are listed as having submitted logs on a total of 200 or more stations. List 60 of them outside the U.S. Undoubtedly there are quite a few VK logs yet to be analysed and acknowledged. It is a pity that the same stations mentioned in last month's v.h.f. notes as having heard Oscar I. made no effort to track it or to submit logs, no matter how simple they may have been. Every little bit of information is of some value, so how about showing that VK Ham Radio is not technically unimpaired? Let us see if we can put us on the Oscar II. map? The support we give these early projects will determine how soon we can participate in things like v.h.f. DX rallies—the future is only just beginning!—3ABP.

## NEW SOUTH WALES

59 Mc.—Activity was very high over the Xmas and New Year period, and until the completion of the Ross Hull Contest. Since then nothing! Have we really folded up, or are we just sitting back waiting for next summer? You can't work DX unless you get on the band.

During this brief period of activity the band was open to all States except VK on most

days. Most consistent were VK5s. The ZLs were there at good strength on most days, the t.v. sound channel on 50.75 Mc. from Auckland being a good indication of band openings across the Tasman.

The rules of the Ross Hull Contest came in for some discussion at the February meeting of the Group.

144 Mc.: A welcome newcomer to v.h.f. is Mariel 2A1A, well known to the old men of 40 mx. As reported last month, Bob 2ASZ and ZL3AQ had two-hour QSO on 144 Mc. on 31st Dec. Here are further details. Bob was portable on Mt. McAllister, approx. 20 miles N.W. of Goulburn, preparing to take part in the v.h.f. Mid-Summer Field Day, when he heard ZL3AQ at 1255 hrs. E.S.T. Contact was established at 1310 hours and maintained till 1355 hrs. He was still on the air at 1400 hrs. when he faded out. Bob reported the signals at 5 and 9 and received 5 and 8. His Tx used a QQQ03-12 was running on 144 Mc. with a 3 over 3 beam. Rx was an SX100 and a 4-tube converter.

ZL3AQ is located in Ashburton and the air-line distance is 1355 miles.

It is interesting to note that the only other ZL contact on 144 Mc., made by Alan Llewellyn N.W. of Goulburn, preparing to take part in the v.h.f. Mid-Summer Field Day, when he heard ZL3AQ at 1255 hrs. E.S.T. Contact was established at 1310 hours and maintained till 1355 hrs. He was still on the air at 1400 hrs. when he faded out. Bob reported the signals at 5 and 9 and received 5 and 8. His Tx used a QQQ03-12 was running on 144 Mc. with a 3 over 3 beam. Rx was an SX100 and a 4-tube converter.

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General: The Feb. meeting was very well attended, with 17 in attendance and a standing room was scarce. We urgently need the new meeting hall which is due to be officially opened in 1963. The speaker for the evening was Alan 2DN who spoke about 10,000 Mc. equipment. Alan gave details on converting available disposals gear, in particular the VT-18/AP-30 unit, recently available through disposals. Alan had his gear for display, also that of Len 2SD. Bob 2ASZ also had his gear for display. There were 7 on units in the hands of VK2 Amateurs, and 4 portable dishes available at a very low price, 10,000 Mc. should become populated. With the gear available, 10,000 Mc. is no more complex than 144 Mc.

If you would like to hear a better signal from 2WL, then contact Tim 2ZTM and he will find a job for you on Saturday or Sunday at Dural. There is much work to be done on the equipment there and any help will be appreciated.—3ZDF.

## QUEENSLAND

Six metre DX has been holding up fairly well, but started the gradual slow-down in the middle of January. There were 7 on 28MHz and 31st Dec. also on the 1st and 11th Jan. Openings to VK3, 5, and 7, also to VK3 occurred on 1st Jan. Over the period 10th to 14th Jan. openings occurred to VK3, 3, 4, 5, 6, 7, 8 and 9. VK3 on 30/1/62, VK3 and 5 on 31/1/62, and VK3 on 30/1/62.

On 6 mx there are regular skeds being carried out to work maximum distances on ground wave and results will soon be forthcoming.

New station on 6 mx is Graham 4ZGN with 5 watts to a modified 532, a dipole antenna and a superregen. rx. He is, however, making a converter to feed into a b.c. set. Welcome to the band Graham. Alan 2ZTM is also working on this part of VK4 is Merv 8ZGM, from Alice Springs, who is now going to make his home in the Sunshine State.

On the 2 mx band things are starting to liven up in southern VK4. Dane 4ZAX heard VK3s ragchewing on 2 mx on the night of 11th Jan., but was unable to break in. Ron 4ZBX, who now resides on 2 mx, worked ZL1P at a range of 270 miles. Ron's small car looks very cute with a 10 el. yagi on top of it.

February's hidden tx hunt was organised by Alan 4ZBP and Malcolm 4ZEL, who hid it on top of an easily visible hill, the trouble being how to find a way up there. The tx was eventually found by Dane 4ZAX.

The V.h.f. Group meeting for the month took place at the QTH of Malcolm 4ZEL and the usual things were discussed. No decisions were reached and an excellent supper was served.—3ZBF.

## WESTERN AUSTRALIA

The Ross Hull Contest has been and gone and we find that most of the activity which was on during the month has slipped away and these number-hunting fiends are not waiting to pounce on anyone who puts a signal on the air.

There was quite a bedlam on 50 Mc. on the morning when VK2TR/B broke through and he was able to work a very large number of VK6s, giving them that much chased-after VK9 contact.

We have been carrying out a lot of checks with David 8AU, but as yet have not been able to make the 124de Kilde 6ZCB and Lance 6ZBK were portable at Cape Naturalist during the last two days of the Ross Hull Contest and were able to work back into Perth on 6 and 21x with 5/9 sigs. They also worked VK2TR/B whilst portable. Rolo 6BO and Frank 6CK went touring the South West during the month and had a hard time of it, working with him and worked back into Perth from down Donnybrook way. He also worked Kevin and Lance at Cape Naturalist.

A new interest has been kindled with the boys at Bunbury and Ian 6ZAL and Ted 6JG are active once again. Skeds are carried out on Sunday afternoons, from 12.00 to 6.00 p.m. so keep a look out for these boys. Brian 6VV in Geraldton has been coming through quite often on 6 mx very often a good phone copy, but sometimes only c.w.

Two metres has still got quite a number of stations operating and the skeds between Rolo 6BO and Wally 6WG are carried out during the week-ends.

Rod 6ZDS and Wally 6ZAA have now xtal locked gear operating on 576 Mc. and this seems to be performing quite well, blowing the air from the vacuum cleaner is about 100 degrees before being blown on to the final tube!

Next meeting will be on 28th March and will have D.C.A. Amenities Room in Guildford Road, Mt. Lawley. Everyone welcomed. In closing, would like to welcome Pat 6ZV and his wife, who have been working with any others who may have escaped my notice.—3RY.

## TASMANIA

Early Jan. provided some reasonable 6 mx DX—although not as consistent as the previous month. VK3, 3, 4 and 5 on Jan. 1, 3, 4, 10 and 11th. 12th and 13th much better; Melbourne stations were contacted from southern VK1 around 1230 hrs. on 13th. 14th and 15th very satisfactory.

During the morning of 19th, VK2, 3 (Melb.), 4, 5 and 6 were contacted—the best opening to VK6 for the season. A VK9 was heard as was VK4 on 19th. On 21st, ZL2 and TBQ worked 8AU on c.w.

Only other openings worth mentioning were the 12th and 13th. On 12th, 13th and 14th, ZL2 worked a lone ZL4—and the 25th when 8AU was contacted mid-VK2s and 4s.

Two mx has been providing plenty of contact between Launceston area and VK3. ZL2 worked 18 VK3s on 14th—mainly in the Melbourne-Geelong area; following night also open and closed. Other active VK3s were VK3 and VK4. Open again on 23rd. To this time nothing had been heard of East Victorian stations and none of these openings noticed by Hobart station and its supporters.

An effort was made to operate from Mt. Wellington (near Hobart) for the Jan. VK3 Field Day. The weather was against us, high winds and extremely icy conditions made it impossible to raise a mast sufficiently high and the strength of the t.v. control room was much more inviting than the cold interior of the vehicle.

Believe ZL2 and TFF were considering operating from Mt. Wellington (near Hobart) for the Feb. Field Day—hope this proved possible.—TZA0.

## PAPUA

Activity on 6 mx is quite high here, with myself (8AU), Murray 9CK, Gordon 8NW (operating mobile from all the choice high spots around Port Moresby, 200 ft. above sea level) recently returned from a year's stay in VK2 and was operating during the latter part of the Ross Hull Contest as VK2TR/B, however have now got the old mast again.

(Continued on page 13)



# SIDEBOARD

## Phasing, Xtal Filters, Balanced Mod., Linear Amps., Vox

Sub Editor: BUD POUNSETT, VK2AQJ,

6 Alice Street, Queanbeyan, N.S.W.

ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

### A DIFFERENT KC1

KC4USP sounds very much as though it is another of the American Antarctic stations which have been so plentiful this summer, but this is not so. KC4USP is located on the U.S.S. Vance, stationed 1,000 miles south of New Zealand on the air route between Christchurch and McMurdo Sound. The prime duty of this ship is to act as a navigational beacon and communications relay station for aircraft flying the long hazardous route to and from the Antarctic. In addition to this, the U.S.S. Vance reports the weather conditions and carries out oceanographic surveys. The ship is crammed with radar and communication facilities and it is interesting to note that voice communication to and from the aircraft on h.f. employ single sideband. In addition, s.b. is used on voice circuits to McMurdo Sound and New Zealand. R.T.T. and c.w. are used to pass traffic between the two terminals while c.w. is employed for the Hawaii-U.S.S. Vance circuit. Who said c.w. was out-moded?

Syd., the KC4USP operator, is the chief radioman on the ship and has had 14 years in the U.S. Navy in various parts of the world. If you are at all interested in air or marine communications you are in for a very interesting contact if you look for Syd at the high end of twenty.

### AN R.F. PHASE SHIFT NETWORK

From Mac VK3AZM there comes a very simple circuit for obtaining the necessary 90 degree phase shift for your new or old phasing s.b. generator. This is a network which is extremely simple and you are assured of excellent results without having to use expensive telephone emissions to accurately measure fixed capacitors.

Fig. 1 shows the method of coupling the output of a crystal oscillator to the network. This allows the oscillator to be placed at any convenient place away from the balanced modulator output coil which greatly assists in obtaining better carrier suppression figures.

XTAL OSC

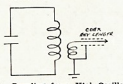


Fig. 1.—Coupling from Xtal Oscillator.

The r.f. phase shift network is shown in Fig. 2. R1 and R2 equal the value of impedance of the coupling cable used. If 50 ohm co-ax is used 50 or 47 ohm 1 watt 5% carbon resistors will be required. C1 and C2 can be 5% mica capacitors and the required value can be calculated as follows:

$C = \text{equals } 1,000,000 \text{ divided by } 2\pi FR$  where C is in pF, R is in ohms, F is in megacycles.

Taking a practical example for a 9 Mc. phase shift network,

$C = \text{equals } 1,000,000 \text{ divided by } (2 \times 3.14 \times 9 \times 50)$  which is approximately 350 pF. If you wish you can save yourself the problem of the maths by looking at the Reactance-Frequency Chart in the A.R.R.L. Handbook or Radio Handbook and read off the capacitance that has a reactance of 50 ohms at 9 Mc., this will give the same result.

C1 and C2 can then be 350 pF. silver mica 5% (or less) capacitors but for those who wish to obtain the ultimate in performance from

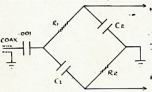


Fig. 2.—R.F. Phase Shift Network.

this network. C1 can be made up of a 270 pF. capacitor in parallel with a 3-30 pF. trimmer. The rest is made up with stray capacitance. The trimmer is then used to obtain optimum r.f. phase shift and hence best sideband suppression.

### THE LAW IN CANADA

The January 1962 "QST" has some interesting information on bandwidth and power input measurement regulations in Canada where the Department of Transport is the licensing authority. It is also worth noting that except for the legal limit figure, the U.S. F.C.C. definition is the same. Quoting from the Dept. of Trade and Commerce:

"Section 44 of the General Radio Regulations, Part II, contains a tabulation of the frequency bands and types of emission which may be used by stations in the Amateur Experimental Service. It should be noted that the emission designator A3 is construed to include all forms of amplitude modulated radiotelephone emissions, including double sideband emission, e.g., full carrier (A3H), reduced carrier (A3A), suppressed carrier (A3J), also independent sideband (A3B). With regard to bandwidth, Amateur Stations using amplitude modulated double sideband (or independent sideband) emissions are permitted a bandwidth of 6,000 cycles (plus-minus 3,000 cycles), whereas with single sideband the equivalent bandwidth is only 3,000 cycles.

"Section 46 of the General Radio Regulations, Part II, provides that the d.c. power input to the plate circuit of the final amplifier stage shall not exceed 750 watts (unless further restricted by Section 45) and Section 80 thereof requires that meters of 'standard accuracy' shall be permanently installed where the d.c. power input of an Amateur transmitter exceeds 400 watts. Noting that these restrictions relate to the basic types of emission designated in Sec-

tion 44, it has been decided to interpret the limitation of Section 46 with respect to single sideband suppressed carrier emissions in the following manner:

"The d.c. power input to the anode circuit of the radio frequency stage supplying power to the antenna system of a single sideband, suppressed carrier transmitter, as indicated by the plate voltmeter and plate milliammeter, shall not exceed 750 watts on voice peaks, provided the plate meters used have a time constant not in excess of approximately 0.25 second (readily obtainable) and the linearity of the transmitters has been adjusted to prevent the generation of excessive sidebands."

### WHO?

Who is doing what? Well, here in the Canberra district ISB has left the pile-ups on 20 for the quiet pastures of 40 metres. Having a rare prefix is not all beer and skittles and Stan finds the 7 Mc. band very relaxing after being chased all over the top of 20. Harold IGU still continues to battle the static of summer 80 metres and talk to a few of his old mates. Peter IJE is almost there with his abusing exciter, and his near-neighbour, Les IPI, is getting the rx side of sideband tidied up before beginning work on a W2EWL exciter—a very wise move.

At 2A2J a band-switched final is nearing completion with a pair of grounded grid 811s as amplifiers. Not far from Yass, ZXP at Gunning, has been working the DX on 29 m. Bob had some troubles with his home-brew tx, but after getting lots of help from various in the gang, has things going very nicely. Sydney has a visitor, in the person of Johnny 4DD, of tropical Townsville. He is staying with 2ADC and brought along his recently finished copy of a 7561. Johnny is very pleased with his efforts and we hope to be able to give you the details at a later date.

Reg Brook, VK2AI, at the controls of his mobile sideband rig.

## VHF NOTES

(Continued from Page 12)

Equipment in use here as follows: 8CK, 15w. to 2E8, 4 el. yagi and xtal converter; 8NW, about 2w. to 6360, 4 el. yagi and xtal converter; 9AU, 20w. to 6148, 4 el. yagi and xtal converter; 8ZBV, 2w. to 8AQS, indoor dipole and xtal converter. Frequencies: 8A 59.55, 8C 400 above 50.1, 8NW 50.5, and 8ZBV with v.f.o. around 50.06-50.1 Mc.

First opening after my return here was on 31/12/61, opening to VK4 from 1400 to 1730 (all times E.A.S.T.). On 4th Jan., open around 1800 to VK3. 12th Jan. open to VK2 (Inverell), VK3 1745-1935. 12th Jan. open to VK2 and VK3 from 1415-1730. Then the big day—14th Jan.—opened at 1200 to VK4, at 1227 VK6 started to roll in! I had 16 VK6 QSOs, 1330 8AU was in, and 8NW remained open to VK4 right through to 1900 hrs. Next opening was on 16th Jan. to VK2 and VK4 1800-1845. On 16th Jan. open to VK4 at 1740, VK3 at 1800, and VK5 1800-1930. 20th Jan. open to VK4 1830-1800. 21st Jan. 4ZAZ in at 0840, then nothing till 1000

when 8AU's auto keyer heard at 89, 8AV wkdx. at 1615, 25th Jan. 7ZAO in from 1700, wkdx. at 1743, then open to VK4 to 1800.

Activity on 2 m. is restricted to myself with 15w. to 6360 on 144.60 Mc., and 9ZBV on 144.1 Mc. with 150 milliwatts transistorised tx and his indoor antenna. I now have a 5 el. yagi up on 144 and it is hopefully pointed to VK4. There are tentative plans for an effort to work Dane 4ZAX when he comes to Cairns around June. We hope to have 100w. and two stacked long yagis at an excellent QTH several hundred feet on a cliff overlooking the sea to the south. 8CW4 novists are anticipated to be used in a hot converter and we have hopes of being able to make QSO with VK4. Who knows, it may even be possible to work much further south than we at present anticipate. I am willing to sked anyone as of now who is interested in a possible 144 Mc. QSO, but the equipment to be used later in the year will be far superior to present gear.

Am listening for ZIs on 51.0 and up and if I hear any and cannot read from 51.0, I will QSY to their band as I have a rock for 51.4 Mc.—9AU.

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**Vietaria.**—Last general meeting of the Group only six members were present. (What has happened to our large Group?) Plans are being made to have speakers and demonstrations on the meeting nights, and also visits to various places for each month, so why not come along, there will be subjects to interest everyone.

**Good listening.**—I was away for a bright night on holidays at Echuca, but had some bad luck on the way there, his car decided to cease a con rod and on driving it a few miles to Echuca ruined the crank shaft. However the engine needed re-conditioning, so the complete job was performed before leaving for home. Mac Hillard is still listening very solidly on v.h.f. and has had very little time for the lower frequencies (a little bird told me that Mac is considering buying a new receiver but at the moment it's too secret).

**Maurie Cox** has just received his long-awaited modified 348 and is quite pleased with the results. Recently Maurice moved things around in his shack (or should I say bedroom) and found his lead-in on the antenna was too short, so he joined a piece of 300 ohm ribbon to the open wire and heard nothing more than V.I. Needless to say, the rx is back in its old position once again.

**South Australia.**—Colin L5031 reports that things are fairly quiet in his part of the State, however he just received a new rx which he believes is a Heathkit. Colin's rx has been in use for the last 12 months. The new rx is an Eddystone 640 which is performing really well. A 2 mx converter is under construction and is almost complete except for a xtal and a condenser which Col is awaiting for. The antenna set-up for 2 mx is a 10 el. beam about 20 m high and 300 ohm line.

**Dale L5023** has now received his 2 call and hopes to be on 6 mx by March, under the call of 5ZEE. Threat of the local s.w.f.s. has put their Limited licence at the last exam. They were John Lehmann, Gary Smythe and Les James. (With you luck packs.) Gary L5026 has been out on his 2 call and hopes to have it erected soon. He is using to mount his v.h.f. beams on.

**North Australia.**—TZEE/L7013 says that things are very quiet in VK7 land. The main active members of the small group are Ted Beard, Mike Jenner, Dave Berry, Richard Rogers and not forgetting Neville Fisher. They are respectively 7EB, TZAV, TZAY, TZAN and TZEE.

The only s.w.f. activity to date is that of a new member, Greg Johnston. The following are a few of his call ones heard in the last month: MIPBW, W1ZBM, DL85A, ODGCT, 7A08M, 5X4AS, 5A1TY, VK1AK, XZ25Y, UB-50M, ZK1BS, ZS5ED, XZ25Y, CR9AX, XW-8AS, BV1US. The above stations were all on 6 mx and used a 4-tube 12AX7 backed converter feeding into a 8-tube 1F and audio stages, and also a Heathkit Q Multiplier. The antenna is a vee beam and a dipole.

The VK7 Group have called meetings but still exist as a Group.

### RADIO MAIL

The letters this month are from the following gentlemen: Aftan Westcott, Eric Trebilcock, Peter Drew, Tom Kennedy and Don Granley. Aftan L2136/VK4 reports that hand conditions have quite dulle but very few break throughs on 6 mx, but on the other hand it could have been better if more time could be devoted to listening. Reception on 30 and 15 mx has been very patchy with some very good openings from W land and Europe.

For those who are interested in Chatham Island, ZJ4F will be operating on 14.129 Mc. at 6400 G.M.T., each Sunday for a few weeks, but it is not known definitely for how long. Aftan is now installing a 23 ft. vertical antenna covering from 40 through to 30 Mc. He says that the vertical has good results on reception.

Peter L6921 also has very little news except a few notes on 20 mx DX. It has been very good between 1100 and 1200 G.M.T. nearly every night, occasionally it is fair around 1100 G.M.T. Peter heard JA, 9M2, DU and then gradually working back during the night to 14.129 Mc. at 1100 G.M.T. and South Africa about the rest of Europe. The Asian stations are audible every night, Europeans about 75 per cent. at night, and South Africa about 10 to 20 per cent. The strength of the Asian stations is excellent, especially EP2, 9M2, XW8, VU and MP4.

40 metres has been fair at 2300-0100 G.M.T. (which is about 50 per cent. of the mornings) the areas audible are North and South America and East Asia.

40 metres has been fair for Ws on c.w. at 0800-1000 G.M.T. and JAs later. Peter has been hearing more a.m. stations than s.s.b. on 20 metres, which is unusual for 20.

During 1961 Eric Trebilcock heard 142 countries and 38 zones also sent him five cards. Eric sent out 1,190 reports. He missed hearing Zone 12 and also missed getting cards from zones 12 and 26. This year Eric has heard 46 countries, 26 zones and one ship and has received 40 QSL cards, and has sent out 32 reports.

Tom Kennedy, L3112, has just purchased a new rx, the name of which is Lafayette HE-30, and is made in Japan under licence from Lafayette in U.S. and Canada. He is overhauling a 9-tube Telefunken as a stand-by rx. The antenna being used is an inverted L which is 40 ft. high. This antenna is said to be good for signals on 15 and 30 m. DX bands. Tom says that the next move will be to get some QSL cards printed; won't be a bad idea, hi!

Dave Jenkins, L3039, is intending to start studying for his ticket when he gets a decent rx line-up. Dave has nearly completed a 10 15 and 20 mx converter and when that is complete and installed correctly a start will be made on a rx to cover 40 and 80 mx.

Don L3088, from Albury, has had a very good start on his listening activities. The log book says that on 16/1/62 the end of Feb. 57 countries were logged and 31 zones. Don has had rx trouble (didn't think you could have trouble with the AR7 Don). The symptoms were no b.f.o., no audio control, weak distorted signals, so Don got to work with his voltmeter which showed no voltage on plate or screen of the second detector-first audio tube (6C8), yet the dropping resistors were reading 230v. Input—plus a short circuit some place.

The cause of this was what happened. The lead of the grid cap had come through by the valve shield and shorted it to earth. This in turn overheated the blocking resistor between first audio and second audio. The resistor got so hot that it came unsoldered from the set. The resistor was then re-soldered in and the rx was then in operation. The 6B7s, 6C8s and the 6C8 were replaced and the set lined up. It is now operating better than ever. But in the process of working on it, the b.f.o. on Don's other set blew up, so a.m. could only be received.

Don is a bit annoyed re the new rule in the S.W. Section of Contest. He has been docked the best part of 100 points in the R.D. He thinks he should have read the rules. It appears that he cannot claim points for both sides of a contact which seems unfair. Don has had some good confirmations of late. They are AP4CF, GM3EST, 085MC, CR1CH, 085MC, TP15R, VK1AR, OK3R. In fact 958MC sent all his VK cards to Don to distribute.

Chaps that's all from me this month. I wish to thank listeners who have written to me with news for this page. Hope to get many more. All letters will not be answered every month, 13 and best of DX, ROBERT L3076.

### S.W.I. DX LADDER FOR MARCH

Countries	Zns.	S.s.b.	W
Conf. Hrd. Conf. Hrd. Conf. Hrd.			
E. Trebilcock	274	280	40
D. Granley	96	247	13
W. Westcott	80	247	13
M. Hillard	67	268	33
M. Cox	38	210	21
C. Greenleath	30	271	21
P. Drew	28	170	7
P. Fields	26	133	—
N. Harrison	26	37	20
L. Thomas	24	12	6
D. Jenkins	10	141	7
H. Burger	6	185	5
N. Fisher	3	36	3

## CORRESPONDENCE

(Continued from Page 11)

The average American Amateur is not affected by the refusal of their government to license aliens. This apathy amongst the Americans will not ease the passage of the bill, and if it is defeated I think we should ask ourselves the following question:

Should we continue to grant licences to American Amateurs, or should we follow the example of England and refuse to do so until they relax their laws?

—David S. Robertson, VK1ATR,  
128 Schlich St., Yarralumbla, Canberra.

### ROSS HULL V.H.F. CONTEST

Editor "A.R." Dear Sir,  
After operating in the '61-62 Ross Hull V.H.F. Contest, there are a few points I would like to make.

1. The object of the Contest can hardly be changed in "A.R." Nov. '61, p.5, with the stated scoring system. I would suggest that the wording be along the lines of the following:

"That Amateur v.h.f. operators will endeavour to contact as many other v.h.f. operators as possible under the conditions following."

2. I repeat my earlier suggestion that the duration of the Contest be the 1st Dec. to 31st Jan., but an operator is to submit his log for any consecutive 168 hour period (7 days) within that time and that such 168 hour period be of his own choosing. (For thoughts on this subject I refer you to my letter appearing in "A.R." April '61, p.16.)

3. I feel that my original scoring table should be altered slightly:—

Over 1 & up to 10 miles	50	144	228	576	High-Mc.	Mc.	Mc.	Mc.	er
" 10 " 25 "	0	0	0	2	2	2	2	2	2
" 25 " 50 "	1	0	2	5	8	15	20	20	20
" 50 " 100 "	2	1	4	10	15	20	20	20	20
" 100 " 200 "	3	2	5	15	20	20	20	20	20
" 200 " 300 "	10	5	8	20	20	20	20	20	20
" 300 " 600 "	3	8	15	15	20	20	20	20	20
" 600 " 1200 "	5	10	15	15	20	20	20	20	20
" 1200 " 1500 "	2	20	20	20	20	20	20	20	20
" 1500 " 5000 "	5	20	20	20	20	20	20	20	20
Greater than 5000 miles	10	20	20	20	20	20	20	20	20

The main alteration consists of altering the distance range 300-500 miles to 300-600, the 500-1000 miles to 600-1200, and adding 1200-1500 mile range.

This change will, in the main, affect only 50 Mc. work and should eliminate some anomalies

existing in my original table proposed in "A.R." April '61, p.5, and June '61, p.16.

The table used in the latest Contest is almost exactly the one proposed by VK5AW and VK-5ZCR in "A.R." April '61, p.16. My table is only disagreeing with the points allocated therein still hold and I refer to my letter in "A.R." June '61, p.16.

4. I would like to call a contest involving both v.h.f. (30-300 Mc.) and u.h.f. (300-3000 Mc.) allocations. The "Ross Hull Memorial V.H.F. Contest." Why not the "Ross Hull Memorial V.U.F. Contest?"

5. Rule 3 in the Receiving Section should be clarified. The term "not the station worked" cannot apply to s.w.f.; they do not "work" stations. I take it that the rule is to be interpreted that an s.w.f. need hear only one side of a contact. Could this not be stated in so many words and clarify the position for the average s.w.f.

Perhaps I am prejudiced, but I feel that the Contest this season was more interesting by the new scoring technique, and whilst I do disagree with the details, I feel the basic idea should be retained in future events. Does anybody agree with me? Does anybody disagree?

—David Rankin, VK3QV.



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FX-1	3500 Kc.	0.001%	£4/6/6      "      "      "
FA-5	7000 Kc.	0.01%	£5/8/0      "      "      "
FA-5	14000 Kc.	0.01%	£6/8/3      "      "      "
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As is customary at the January meeting, the election of Federal Councillor for the ensuing year was held. Two nominations were accepted, that of the retiring Federal Councillor, Pierce Healy (2APQ), and that of Jim Corbin (2YC), who had held that position some years past. After the ballot was taken it was announced that Pierce Healy (2APQ) had been re-elected to the post. Members wish Pierce all success in this position.

The Adams Trophy was then presented to Vic 2VL by the President. This trophy is presented annually to the member of this Division who writes the best article for "Amateur Radio" during the past year. Vic's article, "A Reference Shift Modulator for Mobiles" was judged the best for the year. This appeared in October 1961. We suggest that more of our members endeavour to win this trophy in the coming year, and you may be sure that your article will be appreciated, not only by the members of all Divisions, but by the Magazine Committee who would like to see more such articles from the pen of Amateurs.

A recent licensee, 2ZCH, spoke on the excellence of the A.O.C.P. classes which are supervised by our Class Manager, Cec. 2IR, and not only tendered his personal thanks to Cec., but also spoke on behalf of all those who, having taken the course, have attained their licenses as a result of his efforts on their behalf. We feel sure that there will be many applications for the new course which commences at 14 Atchison St., Cross Nest, this month.

#### HEADQUARTERS OPENING

As many members are aware, the builders are, despite the inclement weather of the past two months, going well ahead with the alterations at Atchison Street. It is envisaged that the new meeting hall will be officially opened on March 17, 1962. This will represent a great advance to this Division, and will enable future Councils to organise their meetings and other activities in our own premises.

#### AGENDA ITEMS

Any agenda items which members would like presented at the Federal Convention, which will be held at Perth at Easter, should be sent in to the Federal Councillor, Pierce 2APQ, immediately. If discussions we hear from time to time are any indication, there must be many such items which should take their place on the agenda.

#### SLOW MORSE

The Slow Morse transmissions are conducted nightly on 3550 Kc. under the supervision of Frank Pearson. The many members who will be taking the A.O.C.P. Course and the A.O.C.P. Correspondence Course will find these transmissions, which are conducted by a roster of members, invaluable in their efforts to attain a full ticket. Transmissions commence at 7.30 p.m. nightly.

#### DX DE LUXE

One of the most unusual of DX contacts occurred recently when Dudley 2DQ, of Broken Hill, made contact with a station operating submarine mobile. The station in question was operating, we understand, in the Puerto Rico area, and was submerged with a whip antenna only a few feet above the water. A contact of some duration was made by Dudley who uses only about 50 watts and has a dipole antenna. This contact was reported in the National News Bulletin on at least two occasions, bringing the Amateur Service to the attention of listeners. The mode used . . . S.S.B.

#### HUNTER BRANCH

Having now partly recovered from my yearly six weeks' hibernation I once again greet all my faithful readers, or was it reader. Having made all kinds of plans as to what to accomplish in the holidays, I promptly forgot the lot and rested, again. However, I was awakened from the just sleep by three lakeside characters who wished to travel in the dark smoke and the Annual Rural Convention. And these said persons were Harry 2AFA, Bill 2ZL and Belmont Bob, and the driver who shall remain anonymous. On arrival we noticed that many other Hunter Branch chaps had the same idea. Those recorded as being present were our President 2AYF, Les 2RJ and Sybil 2XT, Ern 2FP, Stan 2AYL and Fred 2AAE.

A welcome goes out to a new member of the Branch in the person of Rudy Meinsma, an ex PKA, now living in Mayfield. Although the Postmaster General does not agree to a reciprocal issue of license, Rudy is not going to be defeated and intends sitting for the exam as soon as his QTH problem is solved. Although no notes appear for the Booragui High School Radio Club in this issue I must here record the generosity of Rudy who has kindly donated a great deal of useful modern tubes, some display items, a multimeter and assorted items which will prove very useful.

I have noted that Des Mills, of South Cardiff, has a fine coil but the crystal ball tells me not what it is. Our President recently visited the VK3 domain and found that the 2 mx activity in that neck of the woods was just right. DX was so good that Stewart was able to work two VK7s, establishing a station-to-station distance of 365 miles. At the home QTH, the 50 Mc. rig has been persuaded to keep off the frequency of Channel 2 and this means that 6 mx can now be worked while the family watches t.v.—a most satisfactory domestic arrangement.

During the holidays, Max, Harry 2AFA and Keith 2AXX visited the motor ship Anulya in Newcastle and there met Alex, ex 2AKJ and now 4KX. Much was the surprise all round and Alex wonders if such a thing has happened before. The locus was treated to a grand tour of the ship with Rudy and Alex as couriers. Of especial interest was the radio room where 3BZ rx's are used. Thanks again to Rudy and Alex.

Gordon 2ZSG is reported to be ready to go on the air at the earliest possible moment or on 4th March, whichever is the sooner. You may well recall that on 4th March the r.f. begins radiating from the hills beyond 2AQR where already a 450 ft. mast may be seen from practically anywhere in the zone. Mac 2ZMO has built himself a standby rig for any eventuality which may arise. Key 2ZKW at Maitland is using the freq. of 148.3 Mc. so you may wish to listen for him there.

At last the Sydney barrier has been broken by Ian 2ZIF, who has worked that fair city on 2 mx. Although not transmitting on 2, Les 2RJ listens on this band and there are hopes that he may one day join the gang in Newcastle which now numbers approx. ten. This is a good percentage of all active members in the area. John 2ZJC reports that he heard a VK4 twice on 144 on Dec. 31 and was so elated that he took a holiday immediately to Nelson Bay, calling to see the local apothecaries en route. Muriel 2AIA is celebrating her victory over 2ZL and 2AQR in the 2 mx race.

Bruce, our B.H.S. note writer, has now been exiled to Sydney where he is in training on equipment supplied by Mr. Davidson. As he lives only a few yards from Harold 2AHR, I expect some startling transistor developments shortly.

Will you please take note that the next meeting is the A.G.M. at which anything is

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likely to happen, including the proverbial custard pie eating contest between past and present. Next, a contest, and a very lively one, of hilarity such as rigged elections, loud shouting and playing the flute, to mention but a few. If you would like to join this free for all, as well hear words of wisdom from our President, then come along, but bring your shin pads, to the University of N.S.W., Newcastle College, on 8th March, 1962, at 8.00 p.m. or thereabouts, prepared to be elected to any position. And take further note that no election handouts will be made on the day, but only by order of the Sergeant at Arms, T. V. Rose. See you there, 73, 2AXK.

#### CENTRAL COAST ZONE

During the holiday season we have had visitors from afar including Bruce 3BM and Tom 3AOG. This latter gentleman was active on 80, 2 m including mobile operation with 1 1/4 watts input. Many stations in Sydney were worked at 59 from a suitable location near Gosford. Ken 2ANU enjoyed his holiday at Terrigal and was able to pick up few hints on sideband tx's by visiting local shacks. His mobile rx complete with xtal lattice filter must be some of the best in the area for its neatness and neat wiring. He operates mobile on 40. The Gosford Radio Club lecturer for January was your scribe RON. Great interest was played in the practical aspects of sideband tx construction. A short tape presented to illustrate the lecture accidentally preceded the lecture. The tape was a recording of a 2 m 2IN said he was amazed at the quality obtainable with s.s.b. on a good rx as demonstrated on the tape. Does anyone have a secondhand 254A sale?

At this late stage we wish to thank Mrs. Collett and Major 2RU for the Christmas party complete with delicious dishes. Mrs. Collett is quite renowned.

Alec 2AAK and XYL Mona have moved into their new home on the Murrumbidgee. A warm welcome meets you at the end of five miles of backwoods road. Alec is transferring his activities from Avoca and concentrating on the stage in the area. Mona has moved from Long Jetty to Killarney Vale and is back on 40 phone. His masts were dismantled a number of times. Len 2AMU is very pleased with his HT37 and should be heard more frequently soon. I heard rumours that he was to be heard on 40, 2 m and 30. He is a member of the club is Len Miller, aged 14 years, who has been on his neck for the five-bu-bu-bu bet. He is listening to add a b.t.o. so as not to miss what the sideband men are saying.

Contacts with W sideband stations on 1720 and 1730 are being made. The station which was not in severe. Between 1700 and 1900 local time they monitor 1090 to 1110 Kc. for VK and stations. Some W sideband stations, but others use dipoles only 20 feet high! A number of 2 m xtal masts have been distributed and soon there will be a rush of activity in the Gosford area on this band. John 2ZJ (formerly 2ZJ7) has had a successful mobile holiday by caravan to the Snowy Mountains, Currumbin, and the Blue Mountains. Bill 2ZJ and MI. Buffalo. Skeds were kept with several Gosford stations over three weeks of operation.

#### BLUE MOUNTAINS SECTION

The January monthly meeting was well attended with 19 members at Lawson on 19th. There being no lecture and little business, the meeting was held in the usual manner. The meeting continued for quite some while, which included the operating of the club tx providing the first contact for 202. At this stage the audience for the absence of notes on the past issue relating to our Xmas meeting and party which turned out most enjoyable. On this occasion, Keith 2AAK gave us a few hints on "How to get the most out of your car, with almost no cost."

Most of the notes for the last A.O.C.P. examination were hopeful and is busy setting up on 2 m with a Geloze v.f.o. with xtal, using same as it should be used. Bill 2HZ has been on holiday and could not attend. The meeting was a good time. Jack Ferris is looking for customers who might require the services of his just completed in the past. He has a good time. A bug, I noticed during my travels in a city radio supplier, Jay Zylstra buying up, so looks like Jay is busy with a secret weapon, may be.

Bob 2ASZ had a break through on 2 m from near Goulburn across to ZL land, you could not hold him. You will be very satisfied, but no doubt a very satisfactory effort; contras. Band activity here at yours truly's has been very poor including a burnt out power supply. I have had a very good time. Everybody will be pleased, what no hum! Don 2ART is joining the mobile ranks with 7 and 144 Mc. when he completes a few loose

ends—good for you, Don. Jack 2ADF is blowing the spiders, etc., out of his Geloze 3C. rig with no luck. 2 m and 30. Ken 2AVN is a bush fire brigade meeting the other night, an net up with the latest news but all seems to be a bit of a mess. Al 2ZFB has retired from 2 m and is busy on 6 m xtal up all the DX. 73, Ron 2ADA.

#### AUSTRALIAN CAPITAL TERRITORY

Activity in VK1 land has been rather quiet since Xmas. Brian 1KK has been on a quiet holiday down the coast and found that he had either to leave his suitcase home or to take it, so weakened and was off the air for three weeks. Merv 1ML also has been away but is now back on the air. David IDG spent some time on building and erecting a 60 ft. mast. Local Amateurs are sitting watching for the local controllers to make some pronouncement about v.t. antennae. Rump suggest that they will be taboo completely and this may make it difficult for the v.h.f. enthusiasts. Looks like some battles to come with v.t. on the horizon in a few weeks.

Interesting bit of b.c.l. being caused by Ron 1RL. Character who claimed to know the game in v.t. was getting 120 ft. of broadcast band at a distance of 10 yards on an alleged "hi-fi" set. Tests revealed that the b.c.l. was rather loud but "the sound" was not. The second place was with an aerial, toroid, condenser and germanium diode coupled to the pick-up input. Crystal set owner was rather hostile until it was suggested that he should try the R.L. Remarkable change of attitude suggesting some dislike by complainant of a visit by v.t. 1RL. No aerial, Rump suggest that they will be taboo completely and this may make it difficult for the v.h.f. enthusiasts. Looks like some battles to come with v.t. on the horizon in a few weeks.

### VICTORIA

At the February meeting three excellent films were shown by courtesy of Mullard Australia Pty. Ltd. They dealt with the discovery and use of the electron tube, the development of an ingenious electronic system for counting small particles, and the manufacture of frame grid tubes.

The Secretary, Michael Owen, then explained the main points of the proposed Articles and Memorandum of a Federal Company with the object of bringing about a closer working relationship which reflected the interest of members in this important matter. A motion supporting the Council's moves was put to the meeting and carried.

The next meeting will be held on Wednesday, 7th March, in the Radio Theatre, Royal Melbourne Institute of Technology, where a lecture on Marine Radar will be given by Mr. John Hill of Electronic Industries Ltd. 73, 3AEL.

#### SOUTH WESTERN ZONE

With the holiday period over, things will be back to normal. Still very little in the way of news. I have had a few visitors. Roy 3ZFM, who will be sporting a new call by now; Bill 3ZHL, who was portable on 144 Mc. at the local camping ground, also 3AKN who had just been up to see the M.O. and had some pictures taken.

Bush fire nets have not had much to do in this district so far. Very little local action; they all seem to be building or making alterations to their 2 m and 30. I have been in contact with 1, 2, and 6 m beams on the top. He can hear the 6 m Melbourne lads now. 3FX says the new four foot beam is doing well. He ought to know as he is the only one who is game enough to have a look. We are hoping to see plenty of s.w.l.s. at their Convention here in March. 3-4, 73, 3ANQ.

#### MOORABBIN AND DISTRICT RADIO CLUB

The weekly Monday night net by club members on 30 m is proving to be a success. As many as eight have been on the frequency. The idea behind the project is to let Amateurs throughout Australia know something about their club members and what we do, and the net is not confined to members only. Anybody hearing us operating is welcome to break in at any time and become acquainted with us. This net is a good opportunity for anybody chasing our Honorary Membership Certificate. As you may or may not know, you have to be a member of the club to be considered eligible for this handsome certificate. Look for the net on approx. 3.30 Mc. every Monday night from 1.00 am to 2.00 am.

A team of 15 members were out for the National Field Day and were split into three parties operating from Wonga Park near Crookston. All bands were being worked, but as these notes have to go to press before the actual day, more will be written about our effort next month.

A few personal notes may be of interest at this stage. Bob 8NZ has gone s.s.b. with 2 Collins 1A. Harold 2AFQ is still in process of building, erecting masts, but finds time to be control station 3APC/F for the net on 80 m. Peter 3KX has been holidaying in ZL. Al 3LC has changed QTH, for those interested, the new address is 1534 High St, Glen Iris. He is a splendid technician and has a good time on QTH. Ken 3ACS entertained club members to a barbeque in his grounds on 24th Feb.

Kevin 3ARD has been busy revamping the club tx which he expects to have on the air from the club room this month. Laurie 3CN is more interested in hi-fi at the present than in radio. Steve 3DZ has hardware store at the moment. Bob 3DZ has a new phone on 2 m. phone and c.w. New member, Kerry 3AXT, has altered shift and operates from his home QTH. Max 3DF and Bob 3AQK did a bit of work with the jammer on the recent bush fires. Good luck to them, 73, 3LC.

### QUEENSLAND

#### GENERAL NEWS

First Sunshine State news this month comes with some disappointment. At the January Council meeting held on 5th at the Institution of Engineers Convention 2A/VJ organised the resignation from Qld. Division Presidency and his resignation was accepted with regret. All members enjoyed his time in the office for 12 hours on the air. This was the first meeting held in rooms instead of in private homes, a system which does not impose on the members very much more than the phone at home. At the meeting, W. Jehn was appointed organiser of a listeners' group if he is willing to set Nonmembers were called for 12 Division Councillors. Don't sit back and leave it to the other chap this year, Queenslanders! YOU have your right. Use it.

At the meeting, 10 out of 11 Councillors at the February meeting on 2nd was a good effort and lots of decisions resulted after much discussion. Among these were that two 3.5 Mc. crystals should be re-ground to 7146 Kc. and 7105 Kc., and another of 7171 Kc. be made available for the 20 m band, both for use by 4W1. Also continuing to be re-ground to 7146 Kc. and 7105 Kc., and another of 7171 Kc. be made available for the 20 m band, both for use by 4W1. Also continuing to be re-ground to 7146 Kc. and 7105 Kc., and another of 7171 Kc. be made available for the 20 m band, both for use by 4W1.

The meeting appointed Vln 4VJ organiser of Engineers Convention 2A/VJ organised the resignation from Qld. Division Presidency and his resignation was accepted with regret. All members enjoyed his time in the office for 12 hours on the air. This was the first meeting held in rooms instead of in private homes, a system which does not impose on the members very much more than the phone at home. At the meeting, W. Jehn was appointed organiser of a listeners' group if he is willing to set Nonmembers were called for 12 Division Councillors. Don't sit back and leave it to the other chap this year, Queenslanders! YOU have your right. Use it.

Stan 4SA is the organiser of the Jamboree of the Air this year—that event near the end of the year that brings to the microphone again voices of some Amateurs rarely heard, as well as paying the way for new members. The event this year is certain to be a great success. In Rockhampton, Frank 4FN has sought approval for a mass radio set-up in the city using unclean pieces of radio equipment, three 300 watt tubes, and a microphone. The set-up, 4DO, and Lance Bickford are meeting district Scoutmasters soon to make preliminary arrangements, and then a talk of even applying for a special call sign.

For the following, our inward QSL man, Jack 4JF, might have some interesting pieces of material about 5 in the past. He has been on 4ZAW, 4ZM, 4ZAO, 4ZAL, 4Z4F, 4Z4L and ex-4ZAL. He also has plenty of our Queensland special call signs and is around the world telling of the Sunshine State.

Keen interest in Amateur Radio is being shown by 20 chaps who have started on an O.C.P. instruction course being conducted for the

#### QUEENSLAND DIVISION

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Type 931/8 20 Watts U.L.	4,500 ohms p.p. to 2 or 8 ohms	85/- plus Tax
Type 929 10 Watts	4,000/2,500 ohms s.e. to 15, 12.5, 8, 3.7 and 2 ohms	45/- plus Tax
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Page 23

cation with the Division, and I feel that there should be more of it. To others, of course.

See SGP heard in QSO on 7 Mc. with Bert VK5B, but they both had a good time. I had no technical discussion on beams, ratios, etc., etc. I did not stay long with them. Both signals standing out from the evening QRM like light-house and good quality, too, that counts for anything these days. Jack J5S returned from his extended tour into some of the higher and unexpected regions of the hospitality of en route. Now he is on the look out for mobile gear.

The Division's letter to me today and went off into hysterics as he usually does when he delivers a letter from Lucindale. Inside the letter was a QSL card from VK5KX/Vic giving a receipt for £9 plus 80 sh. on my s.s.b. signals, dated 1st April, 1971. Ha-ha-he-he, how funny can you get, when he signals, let me get at him. He threatened to injure by telling me that he worked a Len Parsons (WSLLG) from Norfolk Island and continued the insults by saying the Len certainly let the Parsons name down. He turned out to be a real gent! Arch signed the letter 75, and said bury the axe—he did not want to hear that I could have told him.

Our President, John JVC, long may he reign, has asked me to devote a few words in this month's magazine to the receipt of the subscriptions for 1962-63, which by the time you are reading this (always assuming that you do read it) will have fallen due. The old practice used to be to post out to the members an account, but as postage started to rise the practice has been to include an account in the Divisional Journal which is issued around February. Last year, it was remarkable how many members did not see the account in the Journal, and until each one was contacted personally, the membership dues were in a decidedly sick condition. By this time the magazine had ceased to be delivered, and confusion reigned supreme. Now, to make a short story longer, all this amounts to the fact that your subscriptions are now due, so what about coughing up. No subscriptions—no function for the Division—and worst of all, no salary for me. What me? What? How can I be paid? Well, if you must know, NIX—plus plenty of abuse!

About this time last year my Amateur licence fell due, and I put on a wing in the net because I had to pay it in a special place and could not pay it at a Post Office in my suburb. This paragraph turned out to be one of the best "Kites" that I have ever sent up, the reaction from all points of the compass exceeded all my hopes. I received a letter about one letter on the subject each month ever since. I even received two this month, one from Basil and the other from Jeff TARK. All telling me that they had noticed where I had failed and advising me to pluck up my courage and give it another go. All right, I will. My fees will be due in February and probably as you read this I will be in duress vile, with Doc SMD personally feeding me with the bread and water, and at the same time whipping me with the cat-o-nine-tails! Don't think that I am retracting my original paragraph. I am still all right. I have received a letter from a VK5 who suggested that he had been able to pay his licence fee anywhere else but at the Receiver of Public Monies. Don't forget, the fee is written only for VK5 consumption! 73, de SPS (Pansy to you).

## TASMANIA

We extend our deepest sympathy to Geoff TZAS following the death of his mother two days before Christmas last. On the same day, I can only hope that his father will be able to understand that the gentleman is still there with no improvement.

Congratulations to Ted TEJ on his election to the office of Federal Councillor for this Division, following upon the very close election with only one vote separating the two candidates.

The club room fund raising committee was delighted with the success of the function at Somerset on 28th Jan. A sum of £16 was added to the fund.

VK7 has an s.s.b. station once again. John TAG has a tx of this type working very well

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induced on the 80 mx band, where he can be worked almost nightly. The call sign of TVS can also be heard regularly on 80 mx c.w. Jan 3VS 5, 6 over here, as indicated in the ad, probably about six months and he welcomes someone to talk to.

January was the month for portable operation, and we heard 7JB, 7CT, 7RL, 7PJ and 7KH at various times during the month.

Remember that the Annual General Meeting and the AGM will be held on Saturday 24th March, 1962, the ladies are invited to the Dinner so bring them along, and make this event the success it was last year. Also, remember to vote for the elections for Council, your vote is important.

Brian TZBE has recently returned, reluctantly, to work after his holiday trip to New Zealand. He has brought back some exquisite ideas on how to cook food, and we have threatened to appoint him the Institute cook, on pain of death if his culinary efforts should not live up to their promise. We were delighted to welcome George TXL and Mrs. Groves among us. They have been holidaying in Hobart, staying with TEJ and Mrs. Cruise.

Our existing club rooms have had a face lift over the past month due to the efforts of a few devoted workers. Our sincere thanks are due to them in this regard. The annual subscription drive is well advanced. Please amount you owe to ease the job on the poor old Secretary. He does not get paid for the work he does on our behalf.

At the January meeting of the V.h.f. Group a most remarkable tape, recorded by WHDD and dealing with modes of v.h.f. propagation, was played. One lesson which can be learned from this tape is that c.w. is an absolute must for achieving consistent results. 73, TZZ.

## HAMADS

Minimum 5/-, for thirty words.

Extra words, 2d. each.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received at 240 Box 36, East Melbourne, C.S. Vic. by 8th of the month, and remittance should accompany the advertisement. Call signs must be included in Hamads. Dealers' advertisements not accepted in this column.

**A SALE of surplus gear:** 3BZ Rx, 200 Kc-30 Mc., 230v., £13. 1000 volt 50 mA. supply, disposals, ideal for 813 Tx, £25. Emerson 21" T.V., excellent order, £50. 7-9 Mc. Command, modified, £84. 4-5.3 Mc. Command, with mixer and 9 Mc. xtal, £84. Clarion Tape Recorder, as new, accessories, £40. Much junk at assorted prices, no reasonable offer refused. Wanted to Buy: H.F. Coil Boxes for HRO, top price paid. Ian Macmillan, VY3CS, 11 Norfolk Rd., Surrey Hills, Vic. Phone WF 1347.

**BARGAIN:** GBL516 16 mm. Sound Projector, £75. Philips TA101D Signal Generator, £12. R.F. Unit 26, £4, or exchange for good communication receiver or tape recorder. VK6RE, 10 Craddock Road, Merredin, W.A.

**BENDIX Frequency Meter with V.R. Power Supply, perfect, £45. 1,150 volt heavy-duty Power Supply, ex U.S.A.F. (RA-348). Approximately two feet square, £15. Lance, VK3DS, 123 Webster St., Ballarat, Vic.**

**BUY:** Command Transmitter Rack, Russell 34-9268 or (home) 74-4469 Vic.

**COMMUN. Receiver R.C.A. AR88, 13 tubes, bandspread all bands including 28 Mc. Good sideband receiver. A1 order. G. B. Lance, VK3DS, 123 Webster St., Ballarat, Vic.**

**FOR SALE:** AR7 £45; converted 522 transmitter £5; also other items to value of £10-£20 to be given to the buyer of both. Phone JU 5195, VK3ZFN.

**FOR SALE:** Eddystone "750" D/Conversion Rx, £100. Central Electronics S.B. Slicer, with API Adaptor, £40. Panadaptor BC-1031-A, 455 Kc., mint cond., £45. Heathkit Sig. Gen., SG8, £19/10/0. Heath 3" v. Oscilloscope, £37. A.W.A. Car Phone Tx, not working, £3/10/0. Rx with Gelofo Front-End, D/Conv., not working, £18. 3BZ Tx, £4. Kingsley S9er, £5. 6" C.R.O. Indicator Units, 230v. a.c. p/supply, £5. 200 mA. Chokes, 2d and 122. 12v. Vih/Trans. 600/60,000 ohm Line Trans., all 5/-, 100 watt Public Address Amp. with p/supply, no valves, £20. Command Rx 3-6 Mc. and 6-9 Mc., £4/10/0 each. Dynamotor, 12v. d.c. input, 550v. 200 mA. output, £2/10/0. Power Trans., 750 aside, 300 mA., £4/10/0. AR8 Rx, £10. Type S P/supply, £10. Six el. 2 metre and 4 el. 5 metre Beams, 300 ohms, £6 each. Gelofo v.f.o. in cabinet, £11/10/0. A.W.A. 6 volt Rx, B/C and S/W, 6-16 Mc., £8. Set of four EF80s and sockets, resistor and cond. on same chassis, 3 units, 12/6. T. Straighair, 185 Stephen St., Yarraville, Victoria.

**FOR SALE:** Gelofo Transmitter G22R, perfect order, mike included, £90. Rotary 3 element Beam, 20 metres, height 45 ft., base 6 ft. square, steel construction, includes a.c. rotating mechanism, seisms and azimuthal direction indicator, transformers and feed lines, cabled flexible guy wires. This unit is easily dismantled and erected, main tower is in two sections, permanent steel ladder on highest section facilitates maintenance, £90. Both units are in perfect order and combine to give superlative DX performance on 20 metres. Mobile Transmitter, 40 metres, commercial finish, final 2E26, mod. pr. 6AQ5s, driven 12AT7, includes loaded whip (imported U.S.A.) for midguard mounting, £23. Inspection at all times will be welcomed. John Moore, 224 Burwood Road, Burwood, Vic. BW 1284. VK3AES.

**FOR SALE:** Hallicrafter SX28 Super-skyrider Receiver, 0.5 to 42 Mc., two r.f. stages, push-pull output, matching speaker, handbook, £70. VK3QF, 155 Kilby Road, East Kew, Vic.

**FOR SALE:** Hallicrafter SX28A Communication Receiver in excellent condition with auto transformer and instruction manual. Speaker optional. VK3LC, 1013 High St., Armadale, Vic. Phone BY 3918.

**SELL, Swap:** A.S.T. Supertracer, C.R.O. Mod. Pwr. Supplies, Valves. Parts of all Types, V.h.f. Gear, Panadaptor 450-470 Kc. if. No dealers. 97 Birkett St., Bedford, W.A.

**TRANSMITTER** in Rack. 100TH final. Bandwidth exciter, etc. Huge power supplies. 12 Meters (Weston), £40. Ditto 813 final, exciter and supplies, £35. Fantastic value VK3DS, 123 Webster St., Ballarat, Vic.

**WANTED:** One BC348 Receiver or one of equal performance. Ring JF 4016 after 7.0 p.m. G. Jessup, 36 Boomerang St., Turramurra, Sydney.

**WANTED TO BUY:** "Short Wave Magazine" copy August 1959. F. G. Bail VK3YS, 60 Shannon St., Box Hill, Vic. WX 2213.

# CRYSTALS ALL THESE FREQUENCIES £2 EACH

3.5 Mc. Ham Band:	50 Mc. Ham Band:	144 Mc. Ham Band (continued):
DC 3515 FT 3555	DC 8333.3 = 50 Mc.	DC 8016 DC 8022.5 DC 8029.5
FT 3535 DC 3560	DC 8383.3 = 50.3 Mc.	DC 8016.5 DC 8023 DC 8030
DC 3536 DC 3562	DC 8400 = 50.4 Mc.	DC 8017 DC 8023.5 DC 8030.5
DC 3537 FT 3564	DC 8416 = 50.5 Mc.	DC 8017.5 DC 8024 DC 8031
FT 3534 FT 3573	DC 8450 = 50.7 Mc.	DC 8018 DC 8024.5 DC 8031.5
DC 3547 FT 3575	DC 8483 = 50.9 Mc.	DC 8018.5 DC 8025 DC 8032
FT 3549 FT 3580	DC 8500 = 51 Mc.	DC 8019 DC 8025.5 DC 8032.5
FT 3552 FT 3587		DC 8019.5 DC 8026 DC 8033
DC 3552 FT 3595		DC 8020 DC 8026.5 DC 8033.5
		DC 8020.5 DC 8027 DC 8034
		DC 8021 DC 8027.5 DC 8034.5
		DC 8021.5 DC 8028 DC 8035
		DC 8022 DC 8028.5 DC 8035.5
		DC 8029

## 7 Mc. Ham Band:

Crystals of any frequency, £2.

## 144 Mc. Ham Band:

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### Superseal Paper Type:

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0.0047 µF. 400v. 0.001 µF. 1000v.

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2 µF. 200v.d.c.w. 2 µF. 250v.d.c.w.

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24 µF. 350 peak volts 2/- each  
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### Metalpak Pig-Tail:

0.022 µF. Sprague 1/- each  
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Ceramic 4-pin Valve Sockets, 2/- each  
" 5-pin " 2/- each  
" 6-pin " 2/- each  
" 7-pin " 2/- each  
7-pin Miniature Valve Sockets and Shields. New 15p for £1.  
9-pin Valve Sockets, McMurdo, 9d. ea.  
Octal Valve Sockets 1/6 each

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100 ohm co-ax. cable, 3/8" diam., 2/- yd.  
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TMK "Syncrotape" 7" Rolls, PL-12 (Standard) £1/16/6  
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## V.H.F. RECEIVERS

Type R89/ARN-5A. 300 Mc. Valves: seven 6AJ5s, two 12SN7s, one 12SR7, one 28D7, six relays, and three crystals of 6522.9 Kc. As new. £5 each.

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20,000 ohms per v. d.c. 10,000 ohms per v. a.c.



**Specifications:**  
D.c. volts: 0-5, 25, 50, 250, 500, 2,500.  
A.c. volts: 0-10, 50, 100, 300, 1,000.  
D.c. current: 0-50 µA.; 25, 250 mA.  
Resistance: 0-60K ohms; 0-6 meg.  
Capacity: 0.01-0.3 µF. (at a.c. 5v.); 0.0001-0.01 µF. (at a.c. 250v.).  
Decibel: minus 20 db. plus 22 db.  
Output range 0-10, 50, 100, 500, and 1,000.  
Battery used: UM3 1.5v. 1 piece.  
Dimensions: 3 1/4" x 4 1/2" x 1-1/8 in.

Complete with internal battery, testing leads and probe.

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## 1155 GENEMOTORS TYPE 34A

Input 9.3v., output 225v. at 110 mA. Complete with relays and filters, in case. Weight 30 lbs. 19/6 each. 5/- handling charge.

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## SPECIALS!!

High or Low Imp. Headphones, 12/6 pr. U.S.A. Ampenol Coaxial Plugs, 5/- ea. Morse Key and Buzzer Sets, new, 12/6 SCR522 28v. Genemotor power supply, 20/- 5/- packing fee.

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## 8 Mc. MINIATURE CRYSTALS

Band-edge market Miniature Crystal and socket, £2.

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120 Kc.-390 Mc. Freq. range (six bands): 120 Kc. to 130 Mc. on fundamentals; 120 to 390 Mc. on harmonics. Mod. freq. 400 and 1,000 c.p.s. Tubes: 12BH7, 6AR5. Rectifier: half wave selenium. Provision for crystal oscillator (xtal not supplied), 1 to 15 Mc. 100, 117 or 250v. a.c. input, 50/60 c.p.s. Size: 7 1/2" x 10 1/2" x 4 1/2" in. Weight: 6 lb.



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